

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

(WITH SUPPLEMENT) { STAMPED.....SIXPENCE.
UNSTAMPED..FIVEPENCE.

Original Correspondence.

THE NEW HARTLEY PIT ACCIDENT.

SIR,—If "A Pitman" had been as fluent at answering questions as at asking he very probably would have given a definition to the term pump end or, at the least, have shown which end of the pump he alludes to in his communication of the 8th inst., and also given us some explanation of the system of raising coal at Cramlington Colliery. But his forte appears to be asking questions upon subjects in which he betrays both want of knowledge and good taste, even in the simple capacity of interrogator. "A Pitman" remarks, in last week's Journal, that my admissions amount to this—that I am a great advocate for two shafts because I know nothing about any other. Surely this conclusion must have been arrived at by a peculiar process of reasoning, for if I knew nothing more than that more than 200 lives had been sacrificed at one fell swoop, in the most painful manner, by the system of working a colliery with only one shaft, it would be sufficient to convince myself, and all those whose logic is guided by their pockets, that the time is come for such a rude system to be destroyed. But it so happens that I know much more of the evils of the system than has been taught me by the dreadful lesson that appears to have awakened all to a sense of their duty, excepting "A Pitman," and it is even consolatory to see that he hesitates to give his name, and that his conscience will not permit him to speak openly in favour of the system of working a colliery with only one shaft, and that he can go no further than to cast doubts upon honest statements, and show the advantages of the one shaft system in a covert manner. I have had opportunity very recently of seeing some of the evils attending this system. In one case, I have known 12½ per cent. more paid for getting and raising coal, owing to the mine being badly ventilated, than if there had been two shafts, and the mine rendered healthy by proper ventilation. The same state of things was going on not two months ago at the colliery referred to, and very probably is yet. Has Hamilton, Page Bank, and other catastrophes taught us nothing of the one shaft system; and are we to wait until those whose lives have been spent in perfecting the system, and whose experience will not enable them to speak of any other, see fit to abandon such a primitive and dangerous method of working a colliery? Is it to be expected that those who consider their pecuniary interests would be materially affected by such a change, will abandon the system, unless the pressure of public opinion be brought to bear upon them? If "A Pitman" means that I know nothing good of the system, I perfectly agree with him, and challenge him to show one single or isolated advantage arising from the system of working a colliery with only one shaft. I almost despair of convincing "A Pitman" that the area of the Hartley shaft was too small for allowing a sufficiency of air to pass up and down to maintain the men in a healthy condition, but I flatter myself that the following figures will be accepted by most of your readers as being sufficient to maintain the assertion that "A Pitman" takes exception to.

The area of the Hartley Pit shaft, before bratticing, appears to have been 113 feet, a fourth at least of which must be deducted for space occupied by pump-stocks, rods, bratticing, &c., which, if equally divided, would leave nearly 43 ft. area for each division. If we take the velocity at 15 ft. per second, or 900 ft. per minute (a velocity which may safely be considered the maximum quantity that could be got through the mine under circumstances such as at New Hartley), we shall have a volume of air passing through the mine equal to 38,700 ft. per minute; this, divided amongst 300 men, would afford each individual workman 129 ft. of air per minute, being rather less than one-half of the quantity given by any authority I have yet seen, and being less than one-third of the quantity allowed for each workman at the collieries under my charge. Does not "A Pitman" think it would be better to devote our time and attention to guarding against accidents rather than making provision against accidents in the manner stated, but not first suggested by him? I perfectly agree with "A Pitman" that the coal mines of this country can never be worked without accidents occurring; but surely that should not prevent us from using our efforts to reduce the loss of life to its minimum. I do not merely insinuate, but make a direct charge upon some of the managers and proprietors of coal mines not doing what they ought to render security to both capital and labour. On the other hand, we have many proprietors and managers of mines who spare no pains or efforts to do all that can be done to afford protection to the workmen; and it will generally be found that those are the concerns that more fully realise the expectations of the proprietors. I hope that the tabulated statement of the cost of sinking shafts, given by me in last week's Journal, will fully satisfy your correspondent; if not, permit me to say that I shall be happy to give him any further information bearing upon the cost of sinking shafts. Whether Mr. Coulson's estimate of the cost of sinking shafts in the North of England is to be taken in preference to that of others, on account of the lengthened experience he has had, I do not know, but I think it ought to be considered how far he is liable to be affected by northern prejudices.

J. GOODWIN.

COLLIERY EXPLOSIONS.

SIR,—Referring to a letter which appeared in the Journal of Feb. 15, suggesting safety havens for imprisoned miners, it may also have some bearing on explosions in collieries. When a portion of the underground workings of a colliery is particularly subject to discharges of carburetted hydrogen, this place might be specially purified, after being isolated, with the advocated "ventilating pipes," so that the issuing gas may pass into the open air at any desired distance from the pit's mouth, without disseminating through other openings.

G. WALCOTT, C.E.

Abchurch-lane, Feb. 25.

EXPLOSIONS OF FIRE-DAMP.

SIR,—It has occurred to me that explosions from fire-damp may be presented in some cases on the homeopathic principle, which is, I believe, to give a medicine which is calculated to produce the disease in a healthy subject. My idea is to hermetically seal the downcast-shaft after the pits have ceased working on Saturdays, and keeping a Struv's ventilator at work in the upcast, thus artificially causing the barometer to fall, the atmospheric pressure to be taken off the coal, and the fire-damp liberated, in the same way as it is during a natural fall of the barometer. No men, horses, or lights being in the pits, I cannot see that any harm can possibly happen, if care be taken to open the downcast in time on Sunday to allow the whole of the explosive mixtures to be swept out, and pure air substituted in the air-ways and headings. The success of the experiment depends on the extent of the exhaustion which could be produced by Mr. Struv's pump—a ventilating fan would not answer, I think. Practical men would be able after one experiment to say if this could be done every night; but it would be impossible to say beforehand how much time would be necessary. Of course, a careful inspection of the pits with a safety-lamp would be necessary before the workmen were admitted.

SUGGESTOR.

THE PROBABLE CAUSE OF THE MERTHYR TYDVIL EXPLOSION, AND THE COMPENSATION LAW.

SIR,—It is said that the explosion at the Gethin Colliery, near Merthyr Tydvil, may have been caused by a door being left open, by which the air for the ventilation of the mine passed not around the workings but through the doorway to the upcast shaft. Now, I am of opinion the explosion was not caused by a door being left open, because there are always (or should be) two doors for the safe working of mines; one door is closed whilst persons pass through the other. Yet at the said time it is probable the poor men may innocently have caused their own deaths by congregating together in the air-passages, as great numbers of them were found there after the explosion; and it being dinner hour when the explosion took place, loaded boxes of coal may have been left also by them in the air-passages. Therefore, if loaded boxes were left in the passage, and the men also congregated therein, the area of the passage may have been so reduced as to diminish the quantity of air which passed around the workings to the explosive mixture; by this the poor men would have innocently caused the explosion by reducing the area of the passage. I have been in mines from a boy; in my time I have seen accidents caused by things which no one could have foreseen, or have any knowledge of before it was too late. I know Mr. Crawshaw's colliery is not the only place where accidents by explosions have been caused by men congregating together; therefore, as there are many accidents in mines which none can account for, and also many persons, for the want of a better knowledge of things, cause their own death, it would not be well to compel by law colliery pro-

prietors to recompense the families of those bereaved; if so Mr. Crawshaw, the Hartley Company, Risca Company, Lund Hill Company, and a host of others, would long ago have had to give up the trade if the law had been in force before this time. Yet the families of the bereaved, and also the poor miners injured by accident, should receive compensation, which could be well accomplished if only every mine proprietor were called upon to collect into one general fund a small sum monthly for, or from, every person employed in mines.—St. Helen's, Lancashire. W. HORTON.

THE GETHIN COLLIERY ACCIDENT.

SIR,—We hope you will kindly give us space in your columns for the purpose of drawing the attention of the public to the case of the poor widows and relatives of the 49 persons who have lost their lives in the Gethin Colliery, near Merthyr Tydvil. We are sure that hundreds of charitable persons in all parts of the kingdom would gladly contribute to their relief if they knew how to remit their gifts. We, therefore, wish to make it known as widely as possible that a local committee has been formed for the purpose of applying any funds with which they may be entrusted for their benefit, and that we shall be happy to receive and acknowledge any remittance which may be sent to us for the purposes of the committee.

JOHN GRIFFITH, Rector of Merthyr Tydvil.
J. C. FOWLER, Stipendiary Magistrate.
J. D. THOMAS, High Constable.

Committee Room, Merthyr Tydvil, Feb. 25.

THE BETTER VENTILATION AND PREVENTION OF EXPLOSIONS IN MINES—SAFETY RESPIRATORS.

SIR,—I beg to recommend to proprietors of mines the extensive use of zinc for the air-doors, chambers, and the close proximity of the furnaces, as this metal rapidly absorbs (and tenaciously retains) both "carbonic oxide gas and carbonic acid, as is evidenced by the pellicles formed on it." In the Hartley Colliery accident life might have been prolonged if the miners had been each in possession of a respirator, consisting of a double plate of perforated zinc, with a similar respirator attached to the mouth-piece to protect the nostrils, as the gas would have been arrested in its passage, allowing them to inhale a pure air.

I am likewise anxious, with a view of lessening misery, and sickness, and premature death among the miners engaged in quicksilver mines, as well as among those employed in the manufacture of looking-glasses, &c., to recommend the use of small gold respirators, which would have the effect of "licking up" the mercury.

JAMES BRUCE (late 33rd Regiment).

P.S.—Mr. Simmons recommends the use of "the barometer in mines." On March 1, 1861, I wrote Admiral Fitzroy to the same effect, which communication he acknowledged, presenting me, by the same post, with a copy of his "Notes on Meteorology."

PUMPING WATER FROM DEEP MINES.

SIR,—I beg to offer my sincere thanks to "M. E." for the great pains and trouble he took in replying to the queries contained in my letter, published in the Journal of Nov. 30, by giving a full and detailed description, on Dec. 14, of the method employed in pumping the water from the deep workings in one of the collieries under his management, and particularly for the liberal spirit he displayed in giving me an opportunity of seeing, personally, the pumps and apparatus he described. I availed myself of this kind offer, and had the pleasure, on the 12th inst., of inspecting these pumps, and I must confess their excellent appliances and adaptation to their work even exceeded my expectations, and fully bore out the exact account of them in the Journal of Dec. 14. I found the horizontal rods working very smoothly, giving no further trouble than the lubrication of the rollers, and pumping the full quantity of water stated; but I was particularly pleased with the inexpensive and most effectual mode of working the double-acting 6-in. pumps, with the tail-rod and V-sheave, and think it is the best appliance that can be adapted for pumping water from a moderate depth in deep workings, and particularly, as was the case in this instance, where a tail-rod is required, and in use, for hauling the coals to the pit bottom, there being little or no additional cost in power, and the expense of a separate engine and horizontal rods is altogether saved, the requirements for this kind of pumping arrangement being confined to the mere cost of the pump and pipes. I beg again to thank "M. E.," and to assure him that I derived great pleasure and satisfaction from my visit and inspection.—Feb. 22.

INQUIRER.

BASTIER'S PATENT CHAIN-PUMP.

(Translation)—SIR,—In reply to the letter of your correspondent, "Devon," in last week's Journal, you will permit me to state that when my chain pump is employed in a shaft, the sinking of which is being continued, or in which the use of gunpowder for blasting is necessary, there are two principal means of protecting the pump from any damage that might be caused by the fragments of rock scattered by the blast. Firstly, as the wooden frame is extremely light, it would be very easy to draw up the lower part of the tube to such a height, which would only be, say, 15 or 20 yards, as would place it beyond the reach of injury. To effect this, all that would be necessary is to remove the chain from the pulley by which the said chain is set in motion, and to unscrew the four bolts which hold in position the two lowest cross-pieces by which the pump is supported; the work would be done in a very short space of time by four men. But there is a second means, which I consider far more simple than this, and which I should, therefore, prefer to adopt. When the miners are ready to set fire to the fuse, I would place a stout wooden trap in the form of a door upon an inclined support between the bottom of the pump and the place where the charge is laid. This would entirely remove all fear both as to the result of the explosion and as to the damage of the pump. I would remark, moreover, that the tubes of my pump are of wrought-iron; and that, as is well known, iron tubes always resist more completely the effect of concussion better than cast-iron, of which pumps are usually made, as a blow, no matter with what instrument it is given, will break a cast-iron article much more readily than a wrought-iron one.

It remains, however, for me to answer a far more important question; it is asked whether my pump could be used in an inclined shaft, so as to be applicable to old shafts? It is well known to all who are acquainted with the chain-pump that this class of pump will pump both in an inclined and in a vertical shaft, because the chain is always stretched through the tube, revolving on the large pulley at the top, and on the small one at the bottom—there would with this arrangement be more friction, of course, but the pump could still be successfully worked. A pretended objection is also raised to my pump on the ground that much space is occupied by the descending chain. The very favourable comparison which my pump bears with ordinary mine pumps will be at once understood when I state that in a pit 8 ft. square my pump, with all the necessary supports, &c., will occupy but one of the angles, and will leave more than one-half of the pit entirely free from top to bottom, so that there would be ample space for the passage of men or materials. The diameter of the chain pulley being only 1 yard 3 in., it follows that at the mouth of the pit the chain occupies but 1 yard 3 in., and the space occupied gradually diminishes until the small pulley at the bottom of the tube is reached. If a comparison be made of the entire space occupied by my pump with the space occupied by the ordinary pumps, which encumber almost the whole of the space in the shaft, a great difference in my favour will be found. Indeed, I am surprised that the space occupied by my pump should be referred to, as it so decidedly one of its advantages; for example, in a space 6 ft. square I could erect and work pumps which would raise 2000 gallons of water per minute. In this case I should put in a double pump, or two pumps side by side. As it is now proposed, however, to sink two shafts in all mines, I think the necessity of working in inclined shafts would almost disappear.

Having thus fully answered "Devon," I will request him to answer two simple questions with respect to the ordinary pumps—What means would be employed to put down an ordinary pump, to raise from 1000 to 2000 gallons of water per minute, in a shaft of 100 yards, or deeper, and full of water? And, secondly, how would the necessary supports for so heavy a column of tubes be put into the pit; and, if the sides of the shaft be sand, clay, or other soft material, would not some support from the bottom of the pit be necessary to sustain the weight of the pump, and to prevent the continual concussion from the motion of the rods having such an effect on the sides of the shaft as to cause dangerous falls? I might put many other questions, but shall reserve them for another opportunity. I am much obliged for the notice of any apparent objections to my pump, in order that they may be answered, and believe, by courage and perseverance in the

cause of science and industry, I shall be enabled each day to render the pump more nearly perfect.

J. U. BASTIER.

19, Manchester-buildings, Westminster, Feb. 27.

MINING IN POLAND—EXPLORING COMPANY.

SIR,—It is now an opinion gaining much ground amongst my countrymen, that it is the development of the material resources of Poland which is most needed. Considering the inexhaustible riches of the rock-mines of Bochnia and Wieliczka, and the metallic ores found on the western slope of the Carpathian Mountains, it is very probable that the (Polish) side of these ranges conceals valuable minerals. In fact, it is stated that an immense quantity of the valuable petroleum has been found in the above localities. But the most important item under the head are the traces of lead and silver near Olkusz, which have been formerly worked to some extent, but subsequently neglected. A number of gentlemen, who take an interest in such matters, have suggested that this would be a subject in which Polish and English capital may at last combine, which, hitherto, has never been the case. It is clear that such an undertaking ought to be begun on a very moderate scale—by the examination of any promising locality within the limits of ancient Poland. I may serve here, by-the-by, that for the last two or three years the feuilleton of several of the great Polish papers contain articles on mining and other scientific subjects.—40, Goner-place, Euston-square. J. LOTNIE.

THE SCOTCH IRON TRADE.

SIR,—The pig-iron trade of Scotland has for more than a month been kept in a more uncertain and unsatisfactory state than usual, by movement among the ironmasters, having for its object a reduction of the present excessive make. This movement has called forth what those who were best acquainted with the temper of the parties interested always predicted it would—ridicule from the general public, and an increased display of the bitterness and animosity among those who might have learned by this time that their interests were the same. From some communications to the Glasgow papers, it might be supposed that the wealthy ironmasters were altogether to blame for this happy state of matters, as they were jealous of their less fortunate competitors, and would submit to present serious losses, for the sake of crushing certain concerns that many years had been thrown in their sides. It is, however, only fair, without claiming too much credit for forbearance and good feeling for the wealthy portion of the trade, to award to the other section their due share of the blame for the break down of the movement, as it was attributable very much to the necessity many firms felt of increasing their production, to enable them to pay their way, and as the firms, being under obligations for heavy fixed rents, actually lost less by selling more than they would do by stopping their works. Whatever the cause may be, the policy being pursued by the trade is suicidal and shortsighted seems patent to all the parties more immediately concerned. The directors of one of our banks, who have the principal stake in two iron estates presently under trust, were as much to blame for the failure of the proposal for a reduced production as any party, and it is difficult to say under which of the classes mentioned they should be placed—whether they may be regarded as poor ironmasters or as a wealthy banking corporation. I have no doubt that Mr. Cumming is right about the millennium being so near, for I presume that the present, even in the iron trade, charity and forbearance, not to any prudence and common sense.

X. Y. Z.

THE WASTE OF THE PUDDLING PROCESS.

SIR,—The invention of the puddling process by Cort, 78 years ago, and of iron bottoms by S. B. Rogers, at a later date, have, no doubt, done much to aid the development of the iron trade, and I am persuaded that the time has now arrived when ironmasters should depend less upon chemistry in enabling them to improve the quality of their iron than upon attention to the efficient heat and atmosphere of the furnace. In South Wales in particular, men, as superintendents, appointed who expect the workman to perform physical impossibilities. I have seen an iron which should have lost nothing by the process, yet have had to waste 6 cwts. a ton, owing to the bad construction of the furnace. At this rate the waste in a forge producing only 18 furnaces would be equal to upwards of 2000 tons per annum, and that, too, of the best quality iron, worth at least 41. per ton, and as puddle bar is only 10. Were the quantity thus wasted converted into merchant bars, as it certainly could be, it would represent, at 71. per ton, a money value of 14,000l. per annum. The reason that highly carbonised pig-iron, or refined metal, requires the greatest possible amount of heat that can be produced by draught to render it fluid, and this together with the heat of the atmosphere, is in badly-constructed furnaces, and with poor coal, the required temperature cannot be produced, yet should the puddle bar not answer the anticipations of the managers they turn round upon the blast-furnace manager, and say they cannot comprehend how iron so highly carbonised should become so poor and rotten, though the metalloids are quite regular, and the iron, before puddling, is in every respect a superior iron. Possibly it is then submitted to some chemist of high repute, who does the peculiar properties of the same, and concludes that the pig is good, and ought to produce substantial bars. What is to be done under these circumstances? It is asked, to most try artificial fluxes—salt, fire-clay, slack, lime, potash, &c.—to stem the difficulty, but it is useless, the iron remaining without greater boiling movement the steam could disintegrate through the iron, and after the charge is removed they are seen lying about in the fluid beneath. When the uselessness of this remedy is proved to be the blame of the iron not turning out well is shifted from one agent to another, and each turn repudiates his inefficiency, and finally the working man is made the scapegoat for the whole, though had his advice been taken the waste of property and confusion might have been prevented.

In many places in Wales, again, the loss of yield in the mill with iron of this quality is enormous. It certainly should not require more than 21 cwts. of puddle bars to produce 1 ton of merchant bars; instead of this, however, more than 23 cwts. are frequently consumed. The imperfect fusion here presents itself—the heat in the balling is many degrees higher than if the iron had been subjected to heat in puddling, consequently there is no body to stand such heat, and the atoms of imperfect wrought-iron are reduced and carried off as oxide of iron—hence the loss of yield. Now, I hope I shall be understood, as I am alluding to the waste resulting from manufacturing the most expensive and trustworthy iron produced in the principality—refined metal from highly carbonised pig. There are some works in which even as much as 26 cwts. are used to produce a ton of bars, and of iron of inferior quality are not treated a whit better, as it is indeed, impossible for the operative to render the iron anything as it should be, but he has the elements so directed through his furnace, that he has the mortification of seeing the iron consumed under his hands without being able to prevent it. I sincerely trust that those whose returns are now at so low an ebb will cause enquiries to be made as to why they are so, and I promise them that, if they ever reach the truth of the matter, they will find that the ruinous loss is in puddling, for there is seldom found defective puddling furnaces, working for twelve months at a stretch, where the loss is less than I have stated. It is somewhat cheering to find that in some parts of Wales there is a partial desire to work upon something like a rational system, and I am sure many ironmasters would do well to imitate the example so nobly set at the Llynvi Vale Ironworks, where the management at present make a practice of having a place for everything, and everything in its place; though no place is provided there either for rotten iron or for inefficient puddle-furnaces.

METALLIFEROUS VEINS IN THE NORTH OF ENGLAND.

(Continued from last week's Journal.)

SIR,—Having made these general remarks on the conditions of a reflecting globe, as serving to give some appreciation of the vast quantity of heat to be given off from the granitic nuclei, during the subsequent period of deposit, and as assisting to facilitate a comprehension of what is to follow, I shall now attempt to give a short explanation of the causes of these shifts, &c., of the metalliferous veins in the North of England. The mass of this locality are chiefly of the mountain limestone series, and consist of alternating members of calcareous, siliceous, and argillaceous characters. Under a general name they may be considered as overlying others that repose on the long diverging edges of the Cambrian granitic nucleus. The heat-evolving principles of this limestone series, as must be acknowledged to have been very considerable, when due regard is paid to the Tyndale fault on its northern confines, the Pennine on its western, the Craven on its southern, and to the network of veins included. Allowing the veins which complete this perfect net work to be giving off more heat than the strata which they traverse, and then laterally upward currents of heated water will take place from their surface, and other lateral ones to each of their sides respectively; therefore, the vast number of veins must be obvious. Their complexity will be so apparent, as a natural consequence, when the veins come within each other's influence, more especially at the intersections, that it seems scarcely necessary to point it out. But, in order to present the reader suppose the case of a true open fissure in primary rock, on the bed of the ocean, having an east and west bearing, or course, and bending considerably from the perpendicular to the south in descending. While the fissure remains open the water, which is heated in it, and sent out upwards into the ocean, must be replaced either of water percolating through the rock and entering the fissure, or by going from the downwards, thus causing up and down currents. After the filling up of the fissure by mineral and metallic matters in that peculiarly built fissure-like structure, characterised by numerous and often nearly vertical planes, the heat will be carried upwards in the fissure, in the direction of these planes. In veins where the mineral has much similarity to the rocks which bound them at any particular place, the heat would describe the above form by saying the sill was set on edge. Then, seeing that the force of escaping heat, at the top of the fissure, may be not much weakened by the fissure being filled with substances in the form just mentioned, it is, therefore, of consequence, in the present instance, whether it be considered as open or filled; but ascending into the upper strata the veins will generally be considered as filled with water from the top of the fissure would not only be opposed to the sediments falling where it occurred, but rather than, and carry them upwards, and away from the top of the fissure, and would diminish upwards as the heat diffused in the ocean, until it was ultimately cooled; then the sediment so gathered and raised would be left at liberty to fall. From these circumstances, it appears evident that more sediment would be deposited on the bed of the ocean to the north or underlying side of the fissure. This being the case, it is also further evident that the underlying side would build up somewhat faster than the overhanging one, and, of course, would attain a higher level after a period of continued deposition. This higher level of the underlying side is in accordance with a very general law respecting metalliferous veins and faults.

To exemplify this part of the subject, and to convey an idea how very small and most inappreciable causes may produce very significant and important results, by continued action through a lengthened period of time: take the building of a primary stratum, of the thickness of 100 fms., let it commence from the primary question, where a number of fissures with no throw are giving out heat in variable quantities, but in a manner similar to the one described, and let the ratio of the thickening of the bed on the underlying side of each fissure be $\frac{1}{2}$ in., 1 in., $\frac{1}{2}$ in., and 2 in. in 1 in. then the differences of level, or throw, of the beds, when the building of 100 fms. has been accomplished, would be 4 ft. 2 in., 8 ft. 4 in., 12 ft. 6 in., and 16 ft. 8 in. respectively. This theory teaches that the throws commence at nothing in the deep-seated strata, and increase through the upper series of rocks. This is in unison with an observed fact in

HOLLOWAY'S OINTMENT AND PILLS—ADMIRABLE REMEDIES.—Sore ulcers, wounds, and scrofulous blemishes may be thoroughly and permanently removed by Holloway's world-esteemed ointment and pills. Mrs. Jackson, of 17, Upper Brook street, Derby, records the cure of her wrist, which had been for 20 years most painfully afflicted by a scrofulous ulcer, for which she had sought surgical assistance in vain. Her legs, varicose veins, swelled ankles, and erysipelas were owing to the judicious use of Holloway's cooling, healing, and purifying preparations, which she generally gives with their first application. However painful the affection may feel, however terrible the case may seem, the sufferer may be cheered by the knowledge that these remedies have cured as bad, if not worse, cases.

Tharshish, Sophera, Sappheir, Oppheir, Ophsir, Joseph., Ant. vii. 6 s. 4.). The Tharshish was a gulf at Ezion Geber, on the Red Sea, and on one occasion the ship was wrecked on the coast of the Tharshish (1 Kings, xxi. 48, and 2 Chron. x. 36.). This precludes the assumption that the Tharshish to go to which Jonah embarked was on the Mediterranean Sea. The Tharshish in 1 Kings is 2 Chron. x. 36. to the same events, but are also different copies, or translations, from the same original, as shown by the phraseology. The compilers are unknown. From Ophir, gold, silver, and precious stones only were brought. (1 Kings, ix. 28, and the corresponding passage, 2 Chron. vii. 18. See also 1 Kings, x. 11, and 2 Chron. ix. 10.) From Ophir, the cargo was gold, silver, ivory, apes, and peacocks. (1 Kings, x. 22, and 2 Chron. ix. 22.) The voyages were made triennially. There are two hypotheses as to the locality of Ophir: some say it was on the Indian coast, others on the African coast. The names of the articles—merchandise from Ophir and Tharshish are not Hebrew but Arabic, and the peacock is not an African bird. The opponents of the Indian origin reply that the term "tharshish" is not an Arabic word. It must be admitted that the Jews were acquainted with Indian products, for silk, which is exclusively Indian, is mentioned (Proverbs, xxxi. 22) as an article of female attire. We find a Sophara in Arabia, Sopara in India, and a Sofara (Sofala) on the coast of East Africa, near Madagascar. This process of repetition of names of places may be traced in America, as Boston, York, Plymouth, Norfolk, &c., and in some measure is the result of colonization. Where Tharshish was is doubtful, but it was one of the ports of destination in the voyage to Ophir and back, and probably lay in that direction. The evidence is insufficient to enable us to decide correctly as to the locality of either port. The assumption of Mr. Gobie that the northern part of Australia (the Gulf of Carpentaria) was the land of Ophir is founded on the route of the Gulf of Carpentaria in the route from the East Indies to Australia, and partly because, as he says, the route was the same as being discovered by the voyagers of Solomon and Hiram. We yet to learn that because King Solomon knew of the Indies, therefore he must have known of the Solomon Isles and Australia. The same argument will prove his knowledge of America. Unfortunately for the truth of Mr. Gobie's assumption, we know when these islands were first baptised "Solomon Isles" and, moreover, that Solomon was not sponsor of the baptism. They were discovered by the Spanish navigator Alvaro Medana del Noya, in 1567. The Spanish historians of the time filled Europe with fabulous accounts of the islands, calling them "Isles of Gold," "Isles of Silver," &c., on account of their supposed riches. This may be proved by consulting the writings. The next assumption of Mr. Gobie is that the identity of Ophir and Australia is proved from the identity of the animal and vegetable races of Australia and the East Indies. According to his argument, on physiological grounds only, it is altogether impossible to suppose the Australians to be Jewish emigrants as the Jews to the other hand, the languages and customs of the people of eastern Africa show that they are not. (Adelung's "Mithridates.")

As to the almuir trees, they are supposed to have been, according to some scholars, the same as the wood of the East Indies, to others the almuir tree of the East African coast, and to others one of the cedar tribe. The almuir tree of the East African coast is a sort of pine tree, which seems tolerably good for musical instruments. It is made of iron, and we know that the hard woods are unfitted for that purpose. But (Hib. Lexicon) defines them to be a species of cedar. The tenor of the evidence shows that almuir was not a wood with a hard grain, such as Mr. Gobie mentions. The word Bosn, signifying a large serpent, is used by Pliny and many classical writers; the derivation is unsettled, but probably from the Greek "Bos", (to celebrate), being the snake which is made worship.

Cain signifies the Latin term for Mercury's wand, called in the English "Cain signifying" (Herald. ix. 100), used by heralds and messengers, from a Greek word which signifies "to announce." We saw the wand before we accede to Mr. Gobie's assertion that the wand was as John Jackson, from Ionia, the name of the wand. Why the wand was thus named is doubtful, probably the term had something to do with the wand from the Latin Unio. As for Unio signifying an unit, it is evidently derived from one of their family names. The derivations of Solomon, Hiram, and a vast number of other family names, can never be found out, but such terms as Adam, Eve, Abel, &c., are names, some noblesse conferred on the individual by reason of some great quality or quality possessed. Thus, Cain signifying "slaughter," must have been given

Mining Correspondence.

BRITISH MINES.

ABERDOVEY.—A. Ede: There is no change to notice in the end driving at the 42, but the men are pushing on the driving with all speed. The lode in the winze sinking under the 32, south of cross-course, is producing a little lead, but not of much value. The stope in back of the 32, on the main lode, is producing 1 ton of ore per fm.; and that over the cross-cut is producing about $\frac{1}{2}$ ton per fm. The stope in the 22, near the engine-shaft, is producing from $\frac{3}{4}$ to 1 ton per fm. The surface and other operations are in good progress.

ALFRED CONSOLIDATION, S. Thomas, T. Noaking, Feb. 26: The main lode in the 160, driving east of Davey's engine-shaft, is 5 feet wide, of a more promising character than for some time past; in the same level west we have cut through the lode south, and now turned to drive in the north part of it. The 150, east of Davey's engine-shaft, is worth 20¢. per fm.; this end is very much improved during the past week; the rise in back of the same level is worth 8¢. per fm. Taylor's slope, in bottom of the 140, is suspended for the present, and the men put to sink the winze in the bottom; the lode is worth 10¢. per fm. The 140, sloping under the same level, on the north lode, is worth 12¢. per fm. The lode in the 140, at the cross-cut, is producing ore, but not to value; Robert's slope, in back of the same level, is worth 9¢. per fm.; Richard's slope, in back of the same level, is worth 10¢. per fm. The 130, at the 100, of cross-cut, is producing ore, but not to value; the 120, at the 100, of cross-cut, is producing ore, but not to value. The 130, driving out of the main lode, is producing ore, but not to value. The lode in the 100, west of the fookan, is without alteration for the past week. We sold yesterday 61½ tons of lead ore, and sampled 304 tons of copper ore, computed.

BEDFORD CONSOLIDATED. J. Mitchell, Feb. 25: In the middle adit level, on the north side, we have a part of the lode come in from the north side of the end, which will be cut into as soon as the men have squared their ground; so far as seen it contains spar, strong mineral, capel, and spots of copper ore, with an increase of water coming therefrom, and I am inclined to think it to be the same lode which we intersected in the cross-cut north (east of the air-shaft); however, this we shall prove by opening on it a little at this point. There is nothing new to report in the cross-cut north. The tributaries' pitch, in back of the 27, continues much the same as for some time past.

BEDFORD UNITED. J. Phillips, Feb. 15: The lode in the 115 west is 2 ft. wide, composed of spar, mundic, and stones of ore. We are driving by the side of the lode in the 103 west. Yandall's stopes, in the back of this level, are worth 4 tons, and Manuel's stopes of ore per fm. The lode in the 90 west is 18 in. wide, composed of spar, mundic, and good stones of ore. The stopes in the back of this level are worth 3 tons per fathom. The lode in the 58 east is 18 in. wide—unproductive. The stopes in the back of this level and the 35 east will yield 2 tons per fm.

BOTTLE HILL.—J. Eddy, Feb. 26: Main lode: We have set to sink a shaft on the course of this lode, between Fezzey's and Vigor's shaft, to six men, on tribute at 13s. 4d. in £., for the tin they may raise in sinking the shaft. They have to sink to the 12 fm. level; this will leave back fully 20 fms. from surface. The shaft is now down about 10 fms., and the lode in the shaft is worth about 10¢. per fathom. Should the lode continue to hold good to the 12, as we have it now, it will lay open a large piece of ground that will be taken away, as we are told, by the 1890s.

alteration.—Buckingham-house Lodge: The cross-cut driving from main lode to this lode in the 34 is now in about 20 fms.; and taking the underlie of this lode in the levels above, we have from 2 to 3 fms. further to drive to cut it. I hope to see the lode at this point in a week or nine days from this time.—Robert's Lode: There is one pitch working on this lode that is in the back of the 17. The tributors' work is now in course of stamping and dressing, and it is turning out very well. We have kindly lode in this level going east; the lode is fully 3 ft. wide, and producing tin. The lode in the present

and is rather hard to commence with. No doubt the ground would soon become easier for driving, and when such change takes place we may expect the lodericher for tin; I think this end ought to be driven. I have put two men in the 24, on this lode, to drive South to ascertain whether any part of the lode is gone off in this direction.—South Lode : When Capt. Gregory was on the mine he was of opinion that the bottom of the shaft was below the ancient workings, but after sinking 7 ft. we again found the old workings below us and where we thought to be the bottom has proved only to be an arch level.

to secure the ground. We have continued to sink, but found it rather troublesome, owing to so much water in the shaft. There is a long range of workings on this lode, and as soon as we get rain the water will find its way to the bottom of the shaft; and when the weather sets in dry there will be no difficulty about the water. There is a great quantity of tin ground above this adit level, on the south part of the lode, that will be found at a profit; we ought to have a stamp near the shaft; this would cut off half the tin from the tribulation now the course of burning their tin, and I hope to sell from 5 to 6 tons in the next month. I shall set two stamps on the tinners' tinstuff by the middle part of the coming week.

BRONFLOYD UNED.—James Lester, Feb. 22: I have just come out of the mine, and am pleased to report that the 40 has come into ore quite as good as the sample I sent you last week from the winze.

— Feb. 26: North Lode: In the winze sinking below the 17, now down about 29 ft., the lode has much improved, and will yield 10 cwt. of lead ore per ft. The same lode in the 40 west, immediately under, is mixed throughout with one of a most promising character, and is also worth 10 cwt. of ore per ft., with every appearance of further

improvement. It is a long time since I have seen a more promising lode than that we have now in the winze and in the level under it; thus the calculation upon which the cross-cut to this lode, and this deep level have been driven, together about 105 fathoms through unproductive ground, to come up quite 23 fms. under where we had that fine discovery of carbonate of lead in the 17, is fully borne out and justified, and I have no doubt whatever but that as soon as the winze is brought to the same level, which it will be in about a fortnight, we shall be winning rich veins of extensive value.

BYRNESFORD HALL.—Feb. 27: There is no alteration in the cross-cut north from this shaft. Miller vein, in the cross-cut from the 100 yard level, is also without alteration. Bostock's pipe yields a little ore in three or four places, and there are some lumps of ore weighing 1 cwt. and above. Simon Vein: The south cross-cut from this vein continues in a bearing measure, and we anticipate crossing the Wolfa vein soon.—Grainger's Shaft: The 70 yard level south-west yields some ore daily, and according to present appearance a south bearing south-west will intersect the Wolfa vein.

—A quick improvement anticipated at the forebore. The slump below the 70 yard level yields some ore daily, and is a place where a quick improvement can be expected. In the 80 yard level south-west the vein is $4\frac{1}{2}$ ft. wide, and the stuff is good—all kept for dressing; there are nice stones of ore here, about $\frac{1}{2}$ cwt. In the 106 yard level north-east the vein is also a fine one, and yields some ore daily.

BRYNATAIL.—J. Roach: The lode in the 25, west of cross-cut, is $1\frac{1}{2}$ foot wide, and is producing occasional stones of lead, and vugs filled with loose ore; these are gene-

ally found towards the bottom of the level. We have still a long length of ground to travel, under which was productive in the 10 fm. level; consequently I still look forward to the discovery of a bunch of ore in this level. The winze sinking under the 10 is more promising than for some time past, and is yielding cubes of ore, which are scattered through the lode; we are saving the stuff for dressing. There is no alteration in the lode in the 10 east. I have placed the timberman to drive west of the deposit of barytes on the Bryntal lode, where I hope to meet with some ore.

BUDNICK CONVOYS.—S. Mitchell, J. Evans, Feb. 17: The engine-shaft is down within 6 ft. of the 50, and we calculate it might be communicated in a fortnight; completed it would thoroughly drain the 40, and enable us to extend the 50 west under the tin ground gone down in the 40; this we consider a good speculation, and we have no doubt, if it were carried into effect, the returns from it would be ample to remunerate the proprietors for their outlay. We find the tin ground is gone down in the 40 for 60 fms. in length, which would be worked at a moderate tribute, provided it was drained;

tributors now working in the bottom of this level have discovered a good branch of tin, but had it been dry it could be worked at 7s. in 1l. The lode discovered in the cross-cut at the 30 is everything to warrant a further trial; judging from the great bunches of tin discovered in the 20, above this and the 20, only a few fathoms behind on a parallel lode we have more than a fair chance of meeting similar results. There are many other points in which we feel satisfied in recommending, especially to prove the ground under the heaven of the Barber's bunch, which was one of the best bunches of tin ever discovered in this

county. Our returns to tin have been more than anyone might reasonably expect from the old levels, but we have been aiming at the deeper level with the full expectation of realising the quantity of tin we mentioned in the first reports. We are confident if the mine were drained that we should not fail in returning 12 tons of tin per month, which would have been realised ere this had we not been curtailed from the commencement in working the mine to a proper advantage. We can assure you we were greatly surprised at the decision of the adventurers in calling a meeting with the view of suspending

operations after laying out so much money without arriving at the object first aimed at and we are satisfied what has been spent is only to the advantage of the parties who may work the mine.

CARADON CONSOLS.—W. Rich, Feb. 25: In driving the 54 east the Menadue lode is enlarging, and carries more ore than formerly, the ground also is easier; so that we are now enabled to reduce the price 2d. per fm.; this looks favourable. The lode in the 54 west is composed of soft neph. vein, and flint spar, and shows a promising answer.

ance; there is great reason to hope that this lode will be found profitably productive after a little more perseverance. The engine lode, in the 68 east, is large and kindly, but cannot yet report any improvement worthy of notice; we are, however, forcing on the lode, by six men, as fast as possible. Every effort also is being made in extending the cross-cut north and south of shaft.

CARMARTHEN UNITED.—R. Sanders, Feb. 24: During the past month the following work has been done: Shaft Anderson, sunk, 46 ft. deep; 4 ft. and 12 in. more not in-

Following work has been done:—Shaft driven, cased, bed pilastered, and timbered; and put in from the 42 to the 54; standing-lift fixed; and plat cut 13 ft. long, 10½ ft. wide, and 8½ ft. high; and the 54 driven north 2¼ fms.: the lode here is 3 ft. wide, but at present unproductive; the 42 driven north ¾ fms.—lode 4 ft. wide, producing saving water for lead ore, the bottom part of the level being a good lode of ore; stoped in back of the same level 7½ cubic fms.; driven a cross-cut west from the same level, 20 fms. northward of shaft, 1 fm. 0 ft. 3 in.; driven the 39 north, on the caunter lode, 3½ fms., lode 3 ft. wide, 6 ft. high, and 12 ft. long.

wide, a small portion of which has been saved for dressing; stopped in back of the 2nd north 4 cubic fms. Saturday last being our pay and settling-day, the following bargains were set:—The 54 to drive north-east, to six men, 4 fms., at 3s. per fm.; the 42 to drive north, to four men, 5 fms., at 5s. 18s. per fm.; to stop the back of the same level to four men, for the month, at 2s. 15s. per cubic fm., lode producing 18 cwt. per fm. to drive north-west on cross lode, towards the caunter, to four men, 2 fms., at 3s. 10s. per fathom, lode 2 feet wide, spotted with lead, but not to value; the 32 to drive north

CARN CAMBORNE.—Wm. Bishop, Jun., Feb. 24: The 13 end, east of cross-cut, of Clarke's lode, is producing stones of ore, and likely to improve. In the rise over this level the lode is small and poor. In the adit end east of cross-cut, on the south lode, the lode is 1½ ft. wide, producing stones of ore, but not to value. We hope to hole the rise over this level to the 10th week. The stopes west of cross-cut, on the lode, will produce 2 tons of

CENTRAL MINERA.—W. Davies, Feb. 27: The great north cross, driving for the red vein, is being driven as fast as the nature of the ground will admit. The present forebreast is 20 yards in advance of the new shaft. The level driving west from Pugh's shaft, on the course of the lode, is producing a little lead, and the ground is looking very promising. The rise in the back of the 55 yard level, east of Edgworth's shaft, is pro-

CHARLOTTE UNITED.—R. Kendall, J. Pemberton, Feb. 22: The lode in the 80 west of the engine-shaft, is worth 71. per fm., and is looking very kindly for a run or gone down from the level above. The lode in the 70, west of the engine-shaft, is producing stones of ore; we have nearly got through the hard ground. The lode in the 50 east of the engine-shaft, is 2 ft. wide, worth 51. per fm.; this lode is giving every indication of being a good one.

cation of a good run ore near at hand; every day is of great importance in this end. The new south lode, in the 50 east, is 12 in. wide, with a good branch of ore. We have cut King's lode in the 50 fm. level cross-cut south; the lode is 2 ft. wide, with good stooges of ore; we have only opened on it a few feet; from present indications we are of opinion that we are not far from a rich run of ore; should this lode prove as we anticipated, we shall very quickly open a good mine; this part can be laid open from surface by resuming the sinking of King's shaft, and cross-cutting the new south lode at a 20

90 fm. level, and communicate the 80, at which point we think the hole will be more productive.—Trenow: We have holed the winze from the 35 to the 45, which will greatly

sampling, and also all particulars about the mine.

WEST WHEAL TOLGUS.—Feb. 26: North Lode: The lode in the 50, east of cross-cut, is 2½ ft. wide, unproductive; the men from this end are now engaged to assist the engineers to put in the machine-engine. No alteration in the 40, east of cross-cut, since last reported, as the men have been employed clearing out the 40 and 50, east of the lode. South Lode: At Taylor's engine-shaft, sinking below the 40, the lode is 2½ ft. wide, composed of spar, peach, and copper ore, producing 1 ton of the latter per fm. for length of shaft—12 ft. The lode in the 65, west of Wheal Taven engine-shaft, is 2½ ft. wide, composed of spar, peach, and copper ore, yielding 1½ ton of the latter per fm., both very kindly lodes, and promising for improvement. The ground in the 50 cross-cut north is moderately easy. We have to-day commenced to bring in the winding-engine, and hope when complete to have plenty of the right sort of work for it.

* With this week's MINING JOURNAL we give a SUPPLEMENTAL SHEET, which contains:—Steam Regenerators (with Engraving)—The Geological Formation of the Earth—England's Position: the Miners, Mining Schools, and Chemistry—The Principles of Geology—Heat-Conducting Powers of Amalgams—What is Good Iron, and How is it to be Got?—On the Impurities of Commercial Zinc—Wicklow Copper Mining Company—Glan-y-Pwll Slate and Slab Company—Great Wheal Martha Mining Company—Pendern Consolidated Mining Company—Successful Mining—Wilds' Ventilator—New Gold Mining Machinery—Plan of the Seton District: Map showing the Relative Position of the Seton Mines, and others adjoining.

* In a SUPPLEMENT to last week's Journal was published the paper read by Mr. Salmon at the Society of Arts, on the Relative Merits of the Different Systems of Working Metallic Mines and Collieries. The Supplement also contained a Plan and Description of the Seton District—A Review of Mr. Makins' "Science of Metallurgy"—the meeting at Wheal Grylls on starting the steam-stamping machinery—the news from Australia—the Quarterly Returns of the Sales of Black Tin and Lead—the Mills and Forges in South Staffordshire—Statistics of Colliery Accidents, &c.

* With the MINING JOURNAL of January 18 we gave a SUPPLEMENTAL SHEET, containing the TITLE-PAGE and INDEX to our THIRTY-FIRST VOLUME.

The Mining Market; Prices of Metals, Ores, &c.

METAL MARKET—LONDON, Feb. 28, 1862.

COPPER.			BRASS.		
Best selected.	p. ton	105 10 0	Sheets	Per lb.	10 1/2-11 1/2
Tough cake	"	102 10 0	Wire	"	9 1/2-10 1/2
Tile	"	102 10 0	Tubes	"	11 1/2-13 1/2
Burra Burra	"	96 0 0	FOREIGN STEEL.		
Copiapó	"	0 1 1/2	Swedish, in kegs (rolled)	"	0 0-16 10 0
Copper wire	p. lb.	0 1 1/2	(hammered)	"	0 0-16 10 0
ditto tubes	"	0 1 1/2	ditto, in faggots	"	17 10 0-18 0 0
Sheeting & bolts	"	0 1 1/2	English, Spring	"	18 0-23 0 0
Bottoms	"	0 1 1/2	Reassumer's, Engineers' Tool	"	44 0 0
Old (Exchange)	"	0 0 10	Spindle	"	30 0 0
IRON.			QUICKSILVER.		
Bars, Welsh, in London	p. ton	6 5 0	Swedish, in kegs (rolled)	"	7 0 0-7 10 0
ditto, to arrive	"	5 17 6-6 0 0	Foreign	"	17 15 0-nom.
Nail rods	"	7 0 0	To arrive	"	18 0 0
Stafford, in London	"	7 0 0-7 10 0	SING.		
Bars ditto	"	7 5 0-8 0 0	In sheets	"	23 0 0
Hoops ditto	"	8 10 0-9 0 0	TIN.		
Sheets, single	"	9 0 0-9 10 0	English, blocks	"	120 0 0
Fig. No. 1, in Wales	"	3 0 0-4 0 0	ditto, Bars (in barrels)	"	121 0 0
Rained metal, ditto	"	4 0 0-5 0 0	ditto, Refined	"	122 0 0
Bars, common, ditto	"	5 0 0-6 0 0	Banca	"	124 10 0-125 0 0
ditto, merchant, in Tees	"	6 10 0	Straits	"	117 0 0-118 0 0
ditto, railway, in Wales	"	5 10 0-5 2 6	TIN-PLATES.		
ditto, Swed. in London	"	11 0 0-12 0 0	IC Charcoal, 1st qua. p. b. x.	"	1 8 0-1 9 0
To arrive	"	11 0 0-11 10 0	IX Ditto 1st quality	"	1 14 0-1 15 0
Fig. No. 1, in Clyde	"	2 8 0-2 10 0	IX Ditto 2d quality	"	1 4 6-1 6 6
ditto, f.o.b. in Tees	"	—	IX Ditto 2d quality	"	1 11 0-1 13 0
ditto, forge, f.o.b. in Tees	"	—	IX Coke	"	1 2 0-1 2 6
Staffordshire Forge Pig	"	3 10 0-3 12 6	IX Ditto	"	1 8 0-1 8 6
Welsh Forge Pig	"	—	Canada plates	"	p. ton 12 10 0-13 0 0
LEAD.			Yellow Metal Sheet		
English Pig	"	20 0 0-21 5 0	Indian Charcoal Pigs	"	6 12 6-6 15 0
ditto sheet	"	21 0 0-21 5 0	(in London)	"	6 12 6-6 15 0
ditto lead	"	22 10 0	At the works, 1s. to 1s. 6d. per box less.		
ditto white	"	22 10 0-23 0 0			
ditto patent shot	"	22 10 0-23 0 0			
Spanish	"	19 10 0			

METALS.—Metals have again relapsed into a state of dulness, the late animated appearance of the market having been caused only by one of those spasmodic reactions which have from time to time occurred during the past year. These transient periods of activity serve to raise false hopes amongst holders and speculators, and though they may give sellers temporary relief, at the same time they inflict a permanent injury on the market, by destroying in a great measure all confidence in its stability. We must not expect a rapid increase of business, as there is nothing whatever in prospect at present to cause it. Any improvement to be lasting must be gradual and steady.

COPPER.—In English descriptions a very extensive business has been doing, at prices considerably below fixed rates; the market is, however, very unsteady, and buyers are in many instances at a loss how to act, for in its present state that which might seem a good purchase one day is likely to be undersold the next, sellers merely suiting their own convenience in making contracts, without reference to fixed rates. About 10½d per lb. is the selling price of manufactured, and 9½d per ton for coke, tile, and ingot. Foreign is slow of sale, and holders anything but firm in price. Burra Burra, 95½, 10s. to 96½; Kapunda, nominal; Chili, 86½; Spanish, 87½. Yellow metal in moderate request, at about 8½d per lb., or 1½d. under fixed rates.

IRON.—Rails unchanged. Merchant bars in good ordinary demand at 5½, 2s. 6d. to 5½, 5s. at the works, and 6½ delivered f.o.b. in London. Staffordshire makes are slowly improving, there being more enquiry for best nail-roads and bars. Inferior brands are still difficult to move off. Swedish bars continue to arrive but slowly, a fair enquiry exists for good specifications at 11½, 10s. ex warehouse. Scotch pigs have during the week reached 49s. 6d., mixed numbers, since which the market has declined about 6d. per ton, closing 49s. Shipping brands dull.

LEAD.—The demand for English pig has fallen off considerably, in consequence of which sellers have been obliged to reduce their quotations. Ordinary soft qualities may now be purchased at 20½; WB, 21½, 5s.; Spanish declined to 19½, 5s. Other descriptions unaltered.

SPELTER.—As we predicted, holders of spelter have been unable to maintain a firm position, and the market is weak, at a reduction of 5s. to 10s. per ton. Present price 17½, 15s., nominal.

ZINC.—Remains without alteration, and in fair demand at 23½.

TIN.—English is unaltered in price, and a limited demand only exists. Smelters adhere pretty closely to fixed rates. In foreign a rather better feeling is manifested; Banca has advanced in Holland to 75½, equal at the present rate of exchange to 126½ in warehouse here. There are, however, sellers in this market at 125½. Fine Straits, 117½ to 118½.

TIN-PLATES.—Are slowly improving, but the present demand is not sufficient to have any immediate effect on the market, stocks having accumulated largely in makers' hands.

STEEL.—A very large arrival of foreign keg from Gothenburg has weakened the market for the present; it may, however, soon right itself, as it is merely the transfer of the Gothenburg stock to London.

THE SCOTCH IRON TRADE.—The stock of pig-iron has during the last two months increased upwards of 30,000 tons, and is now not less than 630,000 tons, inclusive of Carron. The market remains dull and stagnant; merchants, shippers, and consumers are not encouraged to extend operations beyond the immediate requirements of the home and foreign markets. The effect of the recent prostration of commerce is fully illustrated by the Board of Trade Returns, just issued; and it is futile to anticipate a return of prosperity until some time after the American struggle shall have terminated. The price of mixed numbers, warrants, is to-day 49s. 3d., against 48s. 3d. twelve months ago. No. 1 makers' iron nominally 48s. 3d.; No. 3, 47s. 3d. per ton, free on board.

COAL MARKET.—On Monday 33 ships arrived. The quantity of house coal for sale being much reduced, and the cold weather, gave a stimulus to business, and numerous transactions took place at rather better prices. Hartley's were in good demand, and manufacturers' steady at previous quotations. Best house coal, 15s. to 16s.; seconds, 13s. to 14s.; Hartley's, 13s. to 14s.; manufacturers', 11s. to 13s.—On Wednesday 10 ships arrived. The continuance of cold weather caused a good deal of animation in the market, and house coals were freely taken at 6d. per ton advance on Monday's prices. Hartley's were active at an improvement of 3d. per ton.—On Friday 12 ships arrived. The quantity of house coal on sale was trifling, and readily cleared off at a further advance of 6d. per ton. Hart-

ley's were in good demand, at an improvement of 3d. to 6d. per ton. Manufacturers' without change. Hetton Wallsend, 17s.; Haswell Wallsend, 16s. 6d.; Kelloe Wallsend, 16s.; Eden Main, 15s.; Hartley's, 13s. 6d. to 14s. 6d.; manufacturers', 11s. to 13s.; 4 cargoes unsold; 60 ships at sea.

CONTRACT FOR COAL.—The Admiralty require the supply of 1500 tons of South Wales Coal, to be delivered at: Thetis Island, British Columbia.

A very large amount of business has been transacted in the MINING SHARE MARKET this week, the influences to which we referred in our last having been more forcibly felt, and there is every appearance of continued activity. The settlement of the fortnightly account was very heavy in several mines, and in one or two of them stock was short for delivery; but, on the whole, however, it has gone off pretty well. Wheal Grenville has been the leading speculative mine of the week, and shares advanced on Thursday to 3½, and opened 3½ buyers on Friday morning; but as the settlement of the account proceeded, and the shortness of stock for delivery became manifest, attempts were made to put down the price, but they left off 59s. to 61s. The tin lode lately intersected in the 80 cross-cut continues worth 50½ per fathom, and the 110 west has come into copper ore worth from 20½ to 30½ per fm., and getting under the point where in the 100 fm. level above there has been a rich lode for 12 or 15 fms. long. We have always expressed an opinion that Wheal Grenville would some day take a prominent and permanent position, both from its splendid situation and the prospects that the lodes presented of making rich in depth; and we have frequently called attention to the very points now exciting so much interest. Of course, it is impossible to say how far they may continue rich, but the probabilities are in their favour, and shares may reach double their present value before long. West Basset, an adjacent mine, in 6000 shares, rose once to 40½ per share; and in Grenville, up to the present time, nearly 40,000 have been expended altogether, so that shares are still at a heavy discount. East Wheal Grenville shares have also received more attention, and leave off 35s. to 37s. 6d. This mine is between Grenville and South Frances, and down 45 fms. on the disputed lode of West Basset and South Frances, and the same as that just cut in the 80 at Wheal Grenville. Soon after the lode was first cut, 12 months ago, the shares, it will be remembered, rose to 3½, 10s., and created great excitement. East Caradon shares have been pretty firm, and leave off 30½ to 31½; the latest report values the 50 east for the breadth carried at 70½ per fm.; the 60 east at 55½; Fawcett's lode, 12½; new lode, in the 60 west, 40½; 60 east, 8½ per fm. Marke Valley shares have been very largely dealt in, and leave off 10½ to 10½. East Carn Brea shares very firm, and leave off 11½ to 11½. The latest report states that the 26, east of cross-course, is worth 5 tons per fm.; winze below the 26, 4 tons; 40 east, 2 tons; 50 east, 3 tons; 50 west, 2 tons; winzes, 4 tons; the 40, east of western shaft, 3 tons; and the 30 west, 3 tons per fathom; showing a good improvement in the mine. Devon Great Consols have been done at 410 to 420. South Frances have been more enquired after, at 100 to 105. West Basset, 13 to 13½; the winze in the 90 is down to the 104, and a lode driving west towards Grenville shaft is worth 2 tons of ore per fathom.

Condurow shares are flatter, at 65 to 70; at the meeting, held on Feb. 19, the accounts showed a profit of 145½, 1s. 2d. on four months' working; and after charging up costs to end of December, and crediting ores sold Feb. 6 (thus taking, we presume, five months' returns against four months' costs), the mine is still in debt 3515½, 10s. 4d., and no call made! Our readers will remember that on Dec. 7 last we called attention to the financial position of this company, which we considered in direct violation of the Cost-book System. At the meeting in October, 1860, the mine was in debt 3240½, 6s. 9d., and no means taken to liquidate the amount; and we expressed an opinion, which has proved correct, that by February the debt would be increased rather than diminished; and this in the face of a very extraordinary report circulated by the purser (in December), which valued the shaft at 180½ per fm., the 165 west at 80½ per fm., the 165 east at 150½ per fathom, and a winze below the 155 at 100½ per fathom. With such a report as this, the profit on four months' working has been 145½, 1s. 2d., after deducting, be it observed, 1528½, 8s. 5d. from the debits, which it is stated was "special and extra cost." In reality, therefore, instead of a profit, the loss in the four months has been 1383½, 7s. 3d., and taking out the February ore, which should not have been credited, the debt of October has been increased to 4623½, 12s. 8d. And if with such a report as that issued in December the result has been so disastrous, what probability is there, with a much inferior report (though a good one generally), that the mine will be able to pay off for a long time to come this heavy incumbrance without a call upon the shareholders? The present report values the shaft, which in December was worth 180½ per fm., at 90½ per fm.; the 165 west, 25½ per fm. (was 80½ in Dec.); the 165 east, 20½ per fm. (150½ in Dec.); the winze "saving work" (worth 100½ per fm. in Dec.); in these places, therefore, there has been a great falling off in value, if we assume the report of December to have been true; though, as we stated at the time, great differences of opinion existed respecting it. Why, then, we ask again, was not a call made on the 19th? A high rate of interest is being charged for money somewhere; and with such heavy debts due to the merchants, it is impossible that supplies can be obtained on reasonable or ordinary terms. Cook's Kitchen, 30½ to 31½, and in request. Craddock Moor, 28 to 30; East Basset, 47½ to 50; Great South Tolgus, 4 to 4½; the 125, east of Lyle's shaft, is worth 1 ton per fm., and promising for improvement. Great Wheal Fortune have advanced to 15½, 16, and a good business done. Hingston Down, 2½ to 2½; New Seton, 65 to 70; East Seton, 7s. 6d. to 10s. 6d.

Rosewall Hill and Ransom United, 3½ to 3½; the lode in the 140, west of the engine-shaft, is worth about 20½ per fm. The lode in the 80 east is worth 30½ per fm. North Basset, 3 to 3½; North Crofty, 2 to 2½; North Downs, 5 to 5½. North Roberts have again declined to 19s. to 21s. North Roskear 2½ to 2½; North Treskerby, 20 to 21; Par Consols, 8 to 8½; Providence Mines, 41½ to 42½; we understand the dividend at the meeting was 12s. 5s. per share. Sortridge Consols, 10s. to 11s. Redmoor shares more enquired for, at 4s. 6d. to 5s.; the rise from the 70 to the 40 which has taken so long a time, has now been accomplished, and there is thorough ventilation throughout the mine, and the returns of tin will be increased. There are now 16 men on tribute, at an average of 12s. in 17. Great Retallack, 13s. to 15s.; a cross-cut is now being driven through the lode in the bottom of the shaft; there are spots of copper and lead. South Caradon, 31½ to 32½. Carn Camborne shares in demand, at 13s. to 15s. The stopes west of the cross-cut, on south lode, are worth 2 tons of ore per fm. In the eastern adit cross-cut a branch has been intersected, which is an indication of the near approach to the lode. Bottle Hill, 10s. to 11s. buyers. South Caradon Wheal Hooper, 15s. to 17s. 6d.; South Tolgus, 51 to 53; Stray Park, 30 to 31; Tamar Consols, 27s. 6d. to 32s. 6d.; Tincroft, 9 to 9½; Wendron Consols, 12½ to 13½; West Caradon, 40 to 42½; West Frances, 9½ to 10. Wheal Hope, ½ to ½; this mine, in the East Rose district is looking better both for tin and lead. Very large returns were made in a former working, and the lode lost by a slide. In the 28 west, this week, there is a lode gone off south a few fathoms behind the end, worth ½ ton of lead per fm.; and if this should be the main lode, formerly lost, it may prove important.

West Seton, 275 to 285; Wheal Basset, 95 to 100; Wheal Buller, 65 to 70. Retallack, 240 to 250; at the meeting a dividend of 500½ (2½, 10s. per share) was paid, leaving 30½, 11d. in hand; the report of the mine is favourable. Wheal Clifford Amalgamated, 31 to 32; Wheal Kitty (Lelant), 11½ to 11½; Wheal Ludcott, 3 to 3½; Wheal Margaret, 42 to 44; Wheal Seton, 121 to 123; Wheal Trelawny, 17½ to 17½. Wheal Unity, 19s. to 21s.; the lode continues of the same value in the 50 end. Wheal Uny, 5 to 5½; St. Ives Consols, 23 to 25; Basset and Grylls, 9½ to 10½. East Wheal Russell, 2½ to 3; a call of 3s. per share was made at the meeting.

On the Stock Exchange a fair amount of business has been transacted in Mining Shares during the week. The following prices were officially recorded in British Mining Shares:—East Caradon, 31, 30½; Marke Valley, 10½, 10½; Tincroft, 9½; Wheal Kitty, 11, 11½, 11½; West Seton, 27½, 280; Great South Tolgus, 4½; Devon Consols, 410; East Carn Brea, 11½, 11½. In Colonial Mining Shares the prices were:—Scottish Australian, 2½, 2½, 2½, 2½, 2½; Worthing, ½; Kapunda, 24, 24; Port Phillip, 1½; North Rhine Copper of South Australia, ½; Bon Accord, ½. In Foreign Mining Shares the prices were:—East del Rey, 1½, 1½, 1½; Mariquita, ½; St. John del Rey, 63½, 64, 63, 62½, 64; United Mexican, 8½, 8½, 8½; Copiapo, 7, 7½.

The closing quotations for shares in new undertakings were:—Ocean Marine, 7½, 8, prem.; Thames and Mersey Marine, 2 1-16 to 3-16 prem.; Universal Marine, 2, 1½ dis., being again lower; London and Provincial Marine, 1-16 dis. to 1-16 prem.; Mercantile Fire, ½, 1 prem.; Commercial Union, ½ dis. to par; City of Rio Improvements Company, ½, ½ prem.;

London India Rubber Company, ½, ½ prem., being higher; Westminster Brewery, ½, ½ prem. Santa Barbara Mining Shares were quoted ½, ½ prem.; Capula, par to ½ prem.; Don Pedro North del Rey, ½, ½ prem.; Clogau, ½, ½ prem.; Montes Aurores, par to ½ prem.; Cardigan Consols, ½, ½ prem.; Hindostan Copper, ½, ½ dis.; and Yudanamutana, par to ½ prem.

MINING EXCHANGE SHARE LIST.—The following is forwarded to us officially from the Mining Exchange as business done during the week:—SATURDAY, FEB. 22.—Hingston Down, 2 9-16ths; East Seton, ½; Seton, 12½; South Tolgus, 4½, 3-16ths; East Caradon, 30½; Margaret, 42½; Edward, 11½; Kitchen, 30½; Great Fortune, 15½. MONDAY.—North Downs, 5 1-16ths, ½, 3-16ths; South Caradon, 31½; Grenville, 2½; Uny, 5½; Ludcott, 3 1-16th; North Roskear, 22½, 23; South Frances, 10½; Great Fortune, 15½; North Robert, 21½; Kitty Lelant, 11½, ½; Unity, 19½; Seton, 6s. 3d.; Redmoor, 3s. 3d.; East Carn Brea, 10 13-16ths. TUESDAY.—Uny, 5½, ½, 3-16ths; Grenville, 5½, 5½; East Seton, 7s. 6d., 6s. 6d.; dra. 1s.; Great Fortune, 15½, ¾; East Carn Brea, 10½; North Robert, 21½; Carn Brea, 10½; Great Fortune, 15 11-16ths; North Downs, 5½; Ludcott, 3 1-16th, 1s. 3d.; North Robert, 19s. THURSDAY.—Cuddra, 1s. 3d.; Uny, 5½; East Caradon, 30½. FRIDAY (settling-day).—Marke Valley, 10½; North Downs, 5 1-16ths, ½; Uny, 3-16ths; Mary Ann, 15½.

The following are the Government Returns of the exports of articles identified with mining, the produce and manufacture of Great Britain, during the twelve months ending Dec. 31, 1861; and also as compared with the twelve months ending Dec. 31, 1860; extracted from the "Accounts relating to Trade and Navigation," published by the Board of Trade.

DECLARED VALUE FOR THE TWELVE MONTHS ENDING DEC. 31.		
	1860.	1861.
Coal and culm	£3,316,281	£3,593,076
Hardware and cutlery	3,770,609	3,425,260
Machinery:—		
Steam-engines	£1,238,333	£1,243,467
Other sorts	2,599,488	2,976,221
Total	£10,924,711	£11,238,024
Metals:—Iron—Pig	£974,065	£1,047,318
Bar, bolt, rod	2,388,871	1,885,605
Railway	3,408,759	2,903,357
Wire	250,087	207,317
Cast	832,638	701,214
Wrought	3,317,349	2,968,923
Steel	986,228	727,940
Copper—Unwrought	749,879	436,087
Sheets	1,804,151	1,426,081
Wrought	233,656	276,677
Brass	211,692	173,772
Lead—Pig	157,987	70,216
Ore—Litharge	361,892	343,300
Tin—Unwrought	1,600,812	1,362,404
Tin-Plates	2,968,923	1,350,800
Grand total	£28,642,736	£25,714,468
Less increase—Coal and culm, 276,796½; machinery, 381,867½		
Total decrease		£2,648,394

IRISH MINE SHARE MARKET.—Considerable fluctuations have again taken place in the shares of the Mining Company of Ireland, which averaged last week about 17½, 10s. per share. This week they were at a time in demand at 18½, 17s. 6d., which was not sustained, but at 18½, 17s. 6d., and 18½, 15s. for account, they leave off in fair request, making an advance of 1½ to 1½, 5s. per share for the week. General Mining Company for Ireland shares are weak at 5½, so are Connemore shares at 29s. 6d., as Carysfort shares have not moved, remaining nominally quoted at 9s. Wicklow Copper Mining Company shares have receded from 2½ to 2½, 10s. per share, in consequence of the present unsettled state of their position pending the consideration of the desirability of an amalgamation with the Hibernian Mining Company, recommended by the directors: the shares are now on sale at 5½, being a fall of 2½, since last Thursday week. The extraordinary general meeting of the Wicklow Copper Mining Company held on Tuesday, when the Chairman (Mr. John Barton) congratulated the shareholders on the arrangement come to between the boards of directors of the Hibernian and the Wicklow Copper Mining Company, under advice of eminent members of the English and Irish Bars, to the effect that the company should be wound-up under the provisions of the Joint-stock Companies Winding-up Acts, and that for carrying out the details Messrs. Nathaniel Hone and N. Caldwell had been selected to act as liquidators, and stated that it was arranged that the Hibernian Mining Company, which is incorporated under the 32d Geo. III., cap. 24, and consists of present of 1000 shares, of 100½ each (upon which 92½, 6s. 8d. has been paid up), with power to increase their capital as they may deem advisable by the further issue of 100½ shares, should purchase the lease and other property of the Wicklow Copper Mining Company, in consideration of 7500 paid-up shares in the Hibernian Mining Company, to be attached to the shareholders of the Wicklow Copper Mining Company, in proportion of three Hibernian shares for every two shares held by them in this company, by which means the present proprietors of the Wicklow Copper Mining Company would become part owners, in perpetuity and in fee, of their mines, so that all doubt that might now be entertained of obtaining in due time a renewal of the lease for their mines would be removed. It was explained that the Hibernian Mining Company, in addition to the royalties of 1-10th on the present or old workings, and of 1-16th on new fields not yet worked in Ballymurtagh, also possessed, as conservators of the Arklow Harbour, privileges and advantage in the wharfage and tolls connected with that harbour. The amalgamation of the two companies in question, which was strongly recommended by the directors, met with several opponents, of whom Mr. Octavius O'Brien was the most conspicuous. It was urged, in opposition, that the recommendation from the board of the Wicklow Copper Mining Company could not be accepted with implicit confidence, inasmuch as three of the five directors constituting the board also belonged to the Hibernian Company. That the case submitted to counsel, which was signed only by the secretary, should have been prepared by the solicitor of the company; that the circular by which the directors recommend the amalgamation does not contain facts and figures so as to enable the shareholders to rightly understand their position, and that the advantages to be derived by the Wicklow Copper Mining Company from the proposed amalgamation were not so manifest as they were presented as an unexpired term of 22 years of this mining lease. Mr. J. Hone, jun., then proposed an amendment, to the effect that a committee of shareholders be formed, and be empowered to meet from time to time to investigate and to report to the general body of shareholders, and that the directors be requested to furnish all information in their power. This amendment was seconded by Mr. Octavius O'Brien, and carried by a majority, and Messrs. J. Hone, jun., Octavius O'Brien, Robert O'Brien, and John Smith, were appointed to make such investigation, in conjunction with the board, as they might deem necessary, and to report thereon in reference to the subject matter of the meeting; and it was also resolved that the meeting of the shareholders should stand adjourned to that day three weeks. Beyond the remarks we made last week, that "any arrangement of these companies must save much profitless trouble and attendant expenses," we purposely abstain from giving any opinion on the matter under consideration by the Wicklow Copper Mining Company, inasmuch as the high social, professional, and commercial character of the members of their board of directors, as well as of the committee appointed to enquire into and to report on all the details and interests involved by the directors' proposal to amalgamate with the Hibernian Mining Company, is an ample guarantee that the shareholders will have full justice done to them. The only subject which has not been touched upon at the meeting, but will necessarily not escape the attention of the committee of investigation, is the question how the Hibernian Mining Company's interest in the Arklow Harbour, which it is admitted has hitherto merely paid costs, will be affected by the extension of the Dublin and Wicklow Railway to Wexford, which will be open by next winter to the Ovoca Mines (comprising the Ballymurtagh, Cronebane, Tigrany, Ballygahan, Connoree, Knocknole, Carysfort, and one or two other mines), and to Arklow by February next. They will not forget that the railway company will naturally offer every possible advantage to secure the traffic from the Ovoca Mines, amounting annually to about 100,000 tons of sulphur and copper ores, for their 83½ miles of railway to Kingstown Harbour, instead of for the 7 miles to Arklow, the natural advantages of the Kingstown over the Arklow Harbour affording great facility for arrangements which will secure the preference of the Kingstown Harbour, to the great benefit of the railway company, of the mines, and of the buyers of the ores. At Arklow the ores are generally detached during three or four winter months, covering several acres of the quays, while the sulphur-buyers run short of the raw material. Vessels running from Dublin to Arklow for a cargo of ore have to take in ballast in Dublin, at a cost of 2s. per ton to the Dublin ballast-board, while at Kingstown Harbour the ores could be taken as ballast. The water-carriage from Kingstown

England and Scotland would be so much cheaper and more convenient for buyers and sellers, that the railway company will have no difficulty to carry the transit of the Ovea ores for this longer line of rail.—[A very full report of the proceedings at the Wicklow Copper Mining Company is given in the Supplement to this day's Journal.]

At Redruth Ticketing, on Thursday, 2891 tons of ore were sold, realising 15,052 18s. 6d. The particulars of the sale were—Average standard, 10s. 6d.; average produce, 6½; average price per ton, 5½ 1s.; quantity of copper, 180 tons 7 cwt. The following are the particulars:

Tons.	Standard.	Produce.	Price per ton.	Ore copper.
4904	129 0 0	5 5 6	4 5 6	83 10 0
4942	123 0 0	5 5 6	4 5 6	80 16 0
5832	128 0 0	5 5 6	4 5 6	78 3 0
5891	125 0 0	5 5 6	4 5 6	81 0 0

Compared with the sale of last week, the decline has been in the standard 1s., and in the price per ton of ore about 3s. Compared with the corresponding sale of last month the decline has been in the standard 10s., and in the price per ton of ore about 4s. 4d.

At the Swansea Ticketing, on Tuesday, 1047 tons of ore were sold, realising 15,052 18s. 6d. The particulars of the sale were—Average standard, 10s. 6d.; average produce, 16 9-16; price per ton, 14½ 7s.; quantity of fine ore, 173 tons 8 cwt. The following are the particulars of the sales for the past month:

Tons.	Standard.	Produce.	Price per ton.	Ore copper.
1317	105 12 0	15 13 6	11 18 0	89 12 0
2252	101 3 0	15 13 6	11 18 0	85 17 6
1947	100 5 0	16 9-16	14 7 0	86 13 0

Compared with last sale the advance has been—in the standard, 11s.; and in price per ton of ore about 1s. 10d. Compared with the corresponding sale of last month the decline has been—in the standard 4½ 10s., and in the price per ton of ore about 15s. Of the 1047 tons of ore sold on Tuesday, 1047 tons were British mines, which gave an average produce of 34 15-16, and at an average standard of 95½ 9s. 6d.—31½ 1s. 4d. per ton of ore. The remaining 1037 tons were foreign ores, which gave an average produce of 1047 and sold at an average standard of 100½ 6s.—14½ 3s. 9d. per ton of ore.

On March 11 there will be offered for sale 1018 tons, from Knocknagore, Cobre, Berhaven, Springbok, English and Canadian Mines, &c.

The following dividends have been declared during February:

Dividend.	Amount.
Dolcoath	£29 0 0
West Seton	8 0 0
Wheal Clifton Amalgamated	0 12 6
Herdston	1 15 0
Wheal Bassett	3 0 0
Tinctor	0 5 0
Providence	1 5 0
Wheal Margaret	1 5 0
Wheal Oris	1 5 0
Wheal Trevelyan	7 10 0
Wheal Oris	1 10 0
Wheal Seton	2 10 0
Wheal Oris	0 2 6
English and Australian	0 2 6
Lantianian	0 2 6

At the Wheal Owles meeting, on Feb. 21, the accounts for Oct., Nov., and Dec. showed—Balance last audit, 1548½ 8s. 9d.; tin sold (less dues 1-25th), 4870½ 4s. 1d.; receipts, 321½ 7s. 3d.; sundry credits, 101 10s. 5d.—6756½ 10s. 6d.—Labour cost, 11s. 3d.; carriage, 151½ 3s. 2d.; merchants' bills and sundries, 1074½ 2s. 8d.; substat, 204½ 5s. 3d.; stamps, 55½ 1s. 11d.—By dividend, 600½ (7½ 10s. per share), leaves in favour of shareholders, 1630½ 4s. 2d. The following is the work performed during the month:—222 fms. 5 ft. 11 in. driven in levels, 17 fms. 3 ft. 3 in. sunk in shafts and 144 fms. 1 ft. 9 in. stopped on tat for tin. About an average of 40 pitches and on tribute.

At the Providence Mines meeting, on Wednesday, the accounts for the months ending Jan. showed—Balance last audit, 468½ 5s. 1d.; tin sold, 5421½ 9s. 6d.; receipts, 711 13s. 4d.; sundries, 23½ 2s. 7d.—5984½ 10s. 6d.—cost, merchant bills and sundries, 404½ 13s. 7d.; dues, 192½ 13s. 9d.; leaving credit balance, 1920½ 16s. 11d. A dividend of 1400½ (1½ 5s. per share) was declared, and 520½ 16s. 11d. carried to credit account.

At the Wheal Margaret meeting, on Wednesday, the accounts showed—Balance last audit, 270½ 12s. 9d.; tin sold, 3854½ 17s. 4d.—4436½ 17s. 10d.—cost, 1680½ 6s. 3d.; carriage, 70½ 16s. 7d.; coals, 228½ 13s. 1d.; merchants' bills, 432½ 5s. 4d.; income, 62½ 3s. 9d.; dues, 192½ 13s. 9d.; leaving credit balance, 110½ 7d. A dividend of 1120½ (1½ 5s. per share), was declared, and 400½ 10s. 7d. to the credit of next account.

At the Fowey Consols meeting, on Feb. 18, the accounts for the four months ending Dec. showed—Balance last audit, 2747½ 7s. 7d.; copper ore, munda, nickel, &c., 10,979½ 3s. 3d.—13,777½ 12s. 7d.—Mine cost, merchants' bills, and sundries, 31½ 3s. 3d.; leaving credit balance, 3185½ 8s. 7d. The profit on the four months' work was 477½ 4s.

At the St. Ives Consols quarterly general meeting, on Feb. 18, the accounts showed—Balance last audit, 796½ 2s. 2d.; tin sold, 3640½ 15s. 8d.—4436½ 17s. 10d.—cost, 2402½ 16s. 4d.; substat, 315½ 16s. 6d.; merchants' bills, 552½ 1s. 1d.; coals, 6s. 4d.; carriage, interest, &c., 119½ 11s. 11d.; leaving credit balance, 773½ 11s. 9d. The profit on the quarter averaged 63½ 9s. per ton.

At the Polkmoor Mine meeting, on Feb. 17, the accounts for the four months ending Dec. showed a credit balance of 285½ 3s. 4d. A call of 2s. 6d. per share was made. The Rev. E. J. Treffry, Messrs. P. Clymo, W. Hicks, J. H. Dingie, &c., were re-elected as the committee; they stated that—“From our own personal observation we can endorse the statement made by the agent. We have decided on the erection of 12 heads of stamps, that we may commence making returns, that our mine is in sight being sufficient to warrant this decision. The costs will be comparatively small—say, 2500, inclusive of floors. Our engineer promises that we shall commence stamping in two months. We strongly recommend that the sinking of the shaft be continued with all speed. We have much pleasure in telling you that consideration of our outlay the Council of the Duchy of Cornwall have liberally waived the return stipulated to be paid during pleasure.”

At the Great Wagon Consols meeting, on Tuesday, the accounts for the four months ending Dec. showed—Balance last audit, 1474½ 9s. 10d.; mine cost, 4827½ 13s. 9d.; leaving credit balance, 1421½ 11s. 8d. The salary of Mr. Jas. J. Jones was increased to 8½ 8s. per month. Capt. N. Fredrick, T. Ed. Jones, and J. John reported on the various points of operation. They have 14 workmen working by 63 men and 9 boys, and 70 tribute pitches working by 173 men, at 12½, at 600, per ton for tin, which at present price is equal to 10s. 3d. in 17.

At the Hawkmoor Mine meeting, yesterday, the accounts for the four months ending Feb. 21 showed—Copper ore sold, 779½ 17s. 9d.; calls received, 11s. 6d.—1680½ 17s. 3d.—Balance last audit, 270½ 12s. 9d.; mine cost, merchants' bills, and sundries, 1267½ 0s. 7d.; leaving credit balance, 1327½ 9s. 9d. The shareholders are gratified upon the fact of no call being necessary. Capt. Joseph Richards reported that the pitches in and throughout the mine are turning out fair quantities of ore, and the general prospects of the mine are highly favourable. The last month's ore realised over 6½ per ton, showing the quality to be good, and they hoped to be again on Friday next 30 tons of ore.

At the Crane Mine meeting, on Feb. 13, the accounts showed—Balance last audit, 625½ 4s. 5d.; mine cost, merchants' bills, and sundries, 1794½ 5s. 4d.—2419½ 10s. 9d.—cost, 1341½ 5s. 10d.; calls received, 1341½ 5s. 10d.; leaving credit balance, 730½ 3s. 11d. A call of 1½ 1s. per share was made. Capt. H. Skewis reported that they were now at or about the depth at which the mines of this district begin to be productive, and no doubt is entertained that they have a good mine; their great object is to sink the shaft with all possible speed, and drive the levels west, also to cut the Garden Mine meeting, on Feb. 11, the accounts for the four months ending Dec. showed—Labour cost and merchants' bills, 765½ 3s. 4d.; balance at the shareholders from last account, 659½ 3s. 11d.; making a total of 1424½ 7s. 4d. calls made at last meeting, 912½; tin sold, 1 ton 12 cwt. 2 qrs. 15 lbs. (less dues), 10s. 10d.; leaving a balance 413½ 9s. 6d. against the shareholders. A call of 5½ 5s. was made. The agent's report, recommending a shaft to be sunk in the centre of the workings in the higher part of the mine, which offer the best chances of success, was agreed to be carried out. Mr. R. White, the purser, stated that several agents attending mines in St. Just had been underground in the mine, and they had a favourable opinion of the higher part of the set.

At the Great Cranford Mine meeting, on Monday, the accounts showed—Balance last audit, 267½ 11s. 8d.; mine cost, merchants' bills, &c., Nov., 123½ 3s. 11d.; 1892½ 12s. 9d.; Jan., 186½ 6s. 5d.; loss on forfeited shares, 87½ 12s.—4861½ 18s. 4d. 1892½ 12s. 9d.; leaving debit balance, 907½ 12s. 7d. A call of 2s. per share was made. The committee of management were elected.

At the Wheal Damsel meeting, yesterday, the accounts showed a credit balance of 414½. A call of 20s. per share was made.

At the Trevelyan Mine meeting, on Thursday, the accounts showed a credit balance of 900½. A call of 5s. per share was made.

At the Wheal Heale Meeting, on Thursday (Mr. Stokes in the chair), the accounts showed a credit balance of 791½ 18s. 5d. It was resolved that the appointment of a committee of management and the question of dividend should be deferred to the next general meeting. Details in another column.

At the Great Wheal Badden meeting, on Feb. 22 (Mr. C. Hill in the chair), the accounts for the four months ending February showed—Lead ore sold, 111½ 11d.; calls received, 324½ 11s. 6d.—566½ 12s. 5d.—Balance last audit, 76½ 6d.; mine cost, merchants' bills, and sundries, 621½ 9s. 9d.; leaving credit balance, 791½ 18s. 5d. A call of 4s. per share was made. Capt. J. Hampton and J. Jones reported upon the various points of operation; they regard the prospects of the mine as highly favourable.

At the Kelly Bray Mine meeting, yesterday (Mr. J. Field in the chair), the accounts showed a list showing 417 shares in arrears of call, when a resolution was passed absolutely forfeiting all such shares; and it was also resolved to convene a meeting for March 12 for the disposal of the same.

At the Condor Mine meeting, on Feb. 19, the accounts for four months ending Dec. showed a debit balance of 3515½ 10s. 4d. “Owing to the lamented death of Charles Davy, Capt. John Moyie was appointed a joint manager with Captain Jones, and their salaries to be ten guineas per month each. Captain John Dunstan's appointment as captain in the mine was confirmed, at a salary of seven guineas per month; and Henry Bennett, Jun., was appointed a night and day captain, at a salary of seven guineas per month.

month; and Henry Bennett, Jun., was appointed a night and day captain, at a salary of seven guineas per month.

At the Cudra Mine meeting, yesterday (Mr. W. S. Sutton in the chair), the report of the committee stated that the deficit in the accounts of the late secretary, and the loss consequently sustained by the company, were fully ascertained and promptly met, notwithstanding the loss was somewhat large. From the favourable character of the agent's reports submitted to the meeting, and the encouraging statement of Mr. West (of St. Blazey), who attended the meeting at the special request of the committee, of the call of 10s. per share made a portion sufficient to discharge the monthly working cost due at the mine this day was paid over in the room. The Rev. Mr. Treffry and Capt. Peter Clymo were elected members of the local committee, to act with and assist the committee in London. Mr. West stated that Capt. Peter Clymo was a shareholder, and, like him (Mr. West), had the highest opinion of the mine. It was considered by the meeting that the call of 10s. per share would be ample to discharge all the existing liabilities, and leave the valuable machinery and materials on the mine free of debt. Mr. J. Green was appointed secretary pro tem. A vote of thanks to the Chairman terminated the proceedings.

At the Wheal Tremayne meeting, on Wednesday, the accounts showed a loss on the quarter ending Dec. of 161½ 13s. 8d., about 1200, of which amount was for extras in connection with the re-erection of the 60-in. engine, which is now nearly completed. They expect to sell about 30 tons of black tin in the current quarter.

At the East Wheal Russell meeting, on Thursday (Mr. C. Chaffield in the chair), the accounts for the three months ending Dec. showed a loss of 498½ 7s. 3d., and a balance of assets over liabilities of 599½ 9s. 2d. A call of 3s. per share was made. Details appear in another column.

At the Great Crinins Mine meeting, yesterday (Mr. Lambert in the chair), a call of 10s. per share was made. It was resolved that the company should be wound-up, the committee being appointed liquidators.

At the Brynboron Lead Mine meeting, on Thursday (Mr. E. Edwards, C.E., in the chair), it was resolved that the company should be registered with limited liability. Details in another column.

At the Pendennis Consols Mine meeting, on Tuesday (Mr. W. Bowden in the chair), the accounts for the two months ending Dec. showed a loss of 561½ 18s. 8d. The assets exceeded the liabilities by 520½ 6s. 3d. A call of 3s. per share was made. Details in another column.

At the Vigra and Clogau Mines, during the last week the yield of gold was 119 ozs. 1 dwt. The slight decrease, as compared with the preceding week, is accounted for by the fact of a slight accident to the machinery—the breaking of a wheel.

At the Midland Wagon Company half-yearly meeting, at Derby, the profits enabled the directors to declare a dividend at the rate of 10 per cent., and a further bonus equal to 4 per cent., a considerable sum being also carried to the contingent fund, and in liquidation of preliminary expenses. The reserve fund for the renewal of wagons is now 58,514d. By a subsequent resolution the directors were empowered to borrow a further sum on loan, not exceeding 20,000l.

At the Gloucester Wagon Company half-yearly meeting the dividend was at the rate of 10 per cent. per annum; for the first half-year it was 8 per cent. At a special meeting it was decided to issue new shares (one for two), on which one or two calls of 1½ each would suffice for the present. The sum of 2500l. was voted to the directors for their services.

At the Taff Vale Wagon Company half-yearly meeting, at Bristol, the accounts showed a balance of 611½, and the redemption fund account a balance of 2296½.

LEADS, FEB. 27.—In Mining Shares business continues depressed, and quotations have a downward tendency.—Brea Consols, 18s. to 20s.; Cornubia, 12s. to 15s.; Craven Moor, 2s. to 3s.; Hebdon Moor, 16s. to 17s.; Merryfield, 6s. to 7s.; Nidderdale, par; North Jane, 28s. to 30s.; North Hallenbeagle, 13s. to 15s.; Wet Groves, 8½; Wenleydale, 7s. to 8s.; Yorkshire, 8s. to 9s.—J. GLEDHILL AND CO.

CORNISH PUMPING-ENGINES.—The number of pumping-engines reported this month is 29. They have consumed 1871 tons of coal, and lifted 14½ million tons of water 10 fms. high. The average duty of the whole is, therefore, 52,500,000 lbs. lifted 1 ft. high by the consumption of 112 lbs. of coal. At Dolcoath, they stopped ten times, and the lift has been idle some time. At Carn Brea, a pair of rolls are worked to crush the samples.

The prospects of the DON PEDRO NORTH DEL REY GOLD MINING COMPANY, noticed in last week's Journal, appear to be excellent. We understand that a number of shares have been applied for, and that the directors intend closing the list very shortly. The statements as to the very great value of the property appear to be much strengthened by the fact that it attracted the notice of capitalists so far back as 1852, and that an association was then formed for its development. The stagnation of enterprise and scarcity of money caused by the Russian war led to its suspension, and ultimately the association was dissolved. We are not, therefore, surprised to learn that those formerly interested, seeing the even more favourable terms upon which the property is now obtained, are most anxious as to the success of the present company, and are pressing the promoters for some preference in the distribution of the shares in the new undertaking; and this confidence on the part of the former proprietors betokens well for the mine.

HOLTE-FIELD VIRGIN SILVER MINES.—We observe that this peculiarly desirable property is for sale, preferentially to a joint-stock company, and that its disposal in this country is limited to a short period. Our readers will fully appreciate its value upon a perusal of the following advantageous features which it possesses, condensed from the report of Mr. John H. Clement, F.G.S., the mining engineer by whom the Holte-Field district has been minutely inspected:—“Of the seven districts constituting the Kongsberg Silver-Mining territory, the King's Mines (whose district bears no number) have produced, since 1833, an average annual profit of 44,400l. Up to the period of their great and uninterrupted success, the cost exceeded the returns by 10,422½ 10s. 6d.; since then—from 1834 to 1860—the clear profit has amounted to 1,199,843½, although large contributions to other objects are included as mining expenditure. As a silver-mining district, however, preference is given to the Holte-Field, for the following reasons:—1. The greater altitudes of the mountains give so much greater depth to the Fahlgangs, or silver-bearing channels, that, without sinking shafts beneath the lowest adits, three times as much silver may be found above them.—2. The heads of water for driving machinery, accumulated in immense dams constructed by the old Danish miners, exceed any possible requirement; and the supply of timber is equally abundant for mining, smelting, building, or other purposes.—3. The tailings, after the virgin silver has been picked out for refining, can be smelted down to the mouths of the Holte-Field Mines, instead of being conveyed by land to the Kongsberg smelting-works.—4. The Holte-Field district is close to navigable head of the River Dram, the only inlet and outlet from the coast.—With such evidence of its extreme importance, and assuming that the very efficient co-operation of Mr. Lee Stevens may be secured, in the formation of a company capable of realising the enormous riches contained in the Holte-Field, it appears to us that this is the precise moment in which its successful development may be so attained.

“THE WAR IN AMERICA.”—In a single volume, under this title, Col. Tal. P. Shaffner has given us an Historical and Political Account of the Southern and Northern States, in which the origin and cause of the present secession war is certainly more clearly, and apparently more impartially, explained than in anything we have seen bearing upon the subject. The value of a reliable work of this character can scarcely be overrated, and although, as Englishmen, we can form but a faint idea of the precise feelings of the various parties in America, we are bound to admit that the views of each appear to be fairly represented, and the effects of their policy carefully pointed out. The book narrates the history of the country over which the American Union extended from the earliest period until the election of Mr. Lincoln gave South Carolina a pretext for seceding, and brought about the total disruption so much to be deplored. Throughout the work Col. Shaffner proves himself to be a man of “sound judgment and strict morals,” and his conclusions will, we believe, be universally regarded as correct. “It is but hallucination,” he says, “to believe that the South can be conquered, or restored to the Union under the existing constitution. It is equally fallacious to believe that the Federal and Confederate Governments could exist peace more than a few years. Each will prepare for defence. The spirit of hatred will increase, and ultimate destruction to both will be the consequence. The American people can only live as one nation, though there is territory enough for a dozen. In this judgment, however, we may be biased, because it comports with our wish, ‘United we stand, divided we fall.’”

WEATHER PREDICTIONS.
TO THE EDITOR OF THE MINING JOURNAL.

SIR.—In my last report I stated the weather would be unsettled, with a variable temperature. During the week the winds have been boisterous, with a change in the temperature; and, although the winds have been cold, the thermometer has not fallen to freezing point. Another gale is due on March 1, with the weather more of less unsettled to near the end of the week, with rain and snow in places. G. SHEPHERD, C.E.,
Throgmorton-street, E.C., Feb. 26. Author of “The Climate of England.”

LEAD ORES.
Sold on the 25th February.

Mines.	Tons.	Price per ton.	Purchasers.
Minera Mining Company	120	£12 15 6	Jones, McNeil, & Co.
ditto	100	12 10 0	W. J. Cookson & Co.
ditto	100	12 12 6	Walker, Parker, & Co.
ditto	100	12 16 6	Locke, Blackett, & Co.
ditto	31½	12 16 6	ditto
ditto	31½	12 16 6	Jones, McNeil, & Co.
ditto	7	14 10 6	Walker, Parker, & Co.

Sold on the 27th February.

Mines.	Tons.	Price per ton.	Purchasers.
Westminster	50	12 1 6	Walker, Parker, & Co.
Maeseyash	50	12 5 0	Adam Eytton.
Mount Pleasant	35	12 4 0	Walker, Parker, & Co.
ditto	12	14 2 6	ditto
ditto	5	14 2 6	Walker, Parker, & Co.
Hendre Ucha	14½	12 3 6	ditto
Roman Gravel	35	12 15 6	ditto
Bryntall	31½	12 7 6	ditto
Wheal Mary Ann	60	25 2 6	Stock & Co.

SILVER ORE.
Sold on the 22d February.

Mine.	Tons c. q. lbs.	Price per ton.	Purchasers.
Wheal Ladocott	1 4 2 0	£692 10 0	—

BLLENDE.
Sold on the 25th February.

Mines.	Tons.	Price per ton.	Purchasers.
Minera Mining Company	44	£2 5 0	W. Kenrick.
ditto	19	2 0 0	ditto
ditto	19	2 0 0	A. Courage & Co.
ditto	18	1 10 0	W. Kenrick.

BLACK TIN.
Sold on the 22d February.

Mines.	Tons c. q. lbs.	Price per ton.	Amount.	Purchasers.
Drake Walls	6 10 0	£72 0 0	—	R. Mitchell & Co.
ditto	6 5 0	67 12 6	—	Daubuz & Co.
ditto	6 5 0	67 12 6	—	Blaise & Co.

Sold on the mine.

Mines.	Tons.	Price per ton.	Amount.	Purchasers.
Trevenen, &c.	5 3 0 14	£72 0 6	£371 5 0	—
ditto	0 17 0 6	46 0 0	39 4 6	—

COPPER ORES.
Sold at LIVERPOOL, by Mr. James Hallows, on February 25.

Lot 1 (ex Annie Braginton)	Tons.	Price per ton.	Purchasers.
2 (ditto)	75	20 0 6	Newton, Keates, & Co.
3 (ditto)	75	20 3 9	J. Keys & Son.
4 (ditto)	75	21 0 0	ditto
7 (ex Polestar)	70	19 14 0	P. Grenfell & Sons.
8 (ditto)	70	19 14 0	ditto
9 (ditto)	70	19 14 0	Sims, Williams, & Co.
10 (ditto)	70	19 5 0	P. Grenfell & Sons.
11 (ditto)	70	19 14 0	ditto
12 (ditto)	70	19 14 0	ditto

COPPER ORES.
Sampled February 5, and sold at Swansea February 25.

Mines.	Tons.	Produce.	Price.	Mines.	Tons.	Produce.	Price.
Cobre	96	11½	£9 4 6	Californian	64	23½	£20 18 0
ditto	95	11½	9 4 6	ditto	60	22½	19 14 0
ditto	94	11½	9 4 6	ditto	59	24½	21 10 0
ditto	93	11½	9 2 0	ditto	7	30½	17 10 0
ditto	85	11½	9 7 6	Seville ore	62	30½	7 5 0
ditto	49	21½	18 14 0	ditto	8	15½	7 2 0
ditto	47	21½	18 14 0	ditto	3	15½	13 3 0
ditto	40	21½	18 15 0	ditto	1	24½	20 13 0
ditto	6	68	50 0 0	Trump Island	37	73½	6 10 0
Californian	76	24	21 3 0	Bristol Reg.	43	43	38 7 0
ditto	65	23½	20 18 6	Erin's ore	2	3	1 19 0

TOTAL PRODUCE.

Cobre	605	£7095 3 6	Trump Island	27	£175 10 0
Californian <th>331</th> <th>6878 2 6</th> <td>Bristol Regulus<th>8</th><th>306 16 0</th></td>	331	6878 2 6	Bristol Regulus <th>8</th> <th>306 16 0</th>	8	306 16 0
Seville ore <th>74</th> <th>566 8 0</th> <td>Erin's ore<th>2</th><th>3 15 0</th></td>	74	566 8 0	Erin's ore <th>2</th> <th>3 15 0</th>	2	3 15 0

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Produce.	Price.	Standard.	
British	34 16-16	£31 1 4	£95 9 6
Foreign	16½	14 3 9	100 6 0

Sale.....16 9-16.....£14 7 0.....£100 5 0
Totals—British, 10; Foreign, 1037-1047 tons (21 cwt.)

AVERAGES OF LAST SALE.

Produce.	Price.	Standard.	
British	10½	£9 1 6	£105 5 0
Foreign	17	14 16 3	100 1 0

Sale.....15½.....£13 2 0.....£101 3 0
Totals—British, 739; Foreign, 1725-2464 tons (21 cwt.)

COPPER ORES.
Sampled Feb. 12, and sold at Tabb's Hotel, Redruth, Feb. 27.

THE DEE BANK COLLIERY COMPANY (LIMITED).

To be established and registered under the Joint-Stock Companies Acts, whereby the liability of the shareholders is limited to the amount each subscribes.

Capital £75,000, in 750 shares of £100 each. Deposit on application, £5 per share. First call on allotment, £5 per share, in addition to the deposit on application. Further calls will be made (not exceeding £10 each call per share) as the capital is required for the progress of the works, which will extend over a period of about two years.

PROVISIONAL DIRECTORS.
 GEORGE ONSLOW NEWTON, Croxson Park, Cambridgeshire.
 WILLIAM KEATES, Greenfield Hall, Holywell.
 EDWARD THOMPSON, Hawarden, Flintshire.
 GEORGE HAWORTH, Flookerbrook, Chester.
 WILLIAM MOON, Woolton Hill House, Woolton, Liverpool.
 GEORGE COMER, The Dell, Hoylake, Cheshire.

BANKERS—The North and South Wales Bank, Liverpool.
SOLICITORS—Messrs. Stockley and Wrigley, 16, Castle-street, Liverpool.
CONSULTING ENGINEER—Jacob Higson, 94, Cross-street, Manchester.
RESIDENT MANAGER—George Haworth.
SECRETARY (pro tem.)—Richard Lloyd.

OFFICES (pro tem.)—16, CASTLE STREET, LIVERPOOL.

The object is to re-open and work the extensive coal field at Bagillt, Flintshire, known as the Dee Bank Collieries, which were formerly worked on the crop of the seams, but discontinued 20 years ago, in consequence of an eruption of water from a neighbouring colliery overpowering the then existing inefficient machinery.

The following extracts from the report of an eminent colliery engineer, dated Nov. 5, 1861, speak to the position and capability of the coal field; and he estimates that, with an expenditure considerably less than the proposed capital, the colliery will produce 200,000 tons of coal per annum, and yield a profit of 25 per cent. per annum:—
 "I am well and thoroughly acquainted with the mines and collieries of North Wales and Lancashire, and in other districts, but I do not know any coal field where the mines or seams of coal are so numerous, thick, superior in quality and easy to work, as those in the locality under consideration, while the facilities for disposing of the produce are exceedingly favourable.

"The colliery being situated close to the Chester and Holyhead Railway, and also to the River Dee, an unequalled outlet is opened to almost every market accessible by railway and sea, besides possessing a large local demand for every description of coal, which it is natural to suppose would be augmented by a corresponding supply.

"The aggregate thickness of the several seams of coal in this field has been proved to be about 60 ft., the main or five-yard seam alone being upwards of 12 ft., the three-yard seam 8 ft., and the two-yard 6 ft. in thickness."

An advantageous lease of the coal field, extending over about 3600 acres, is obtained, and the position of the provisional directors, combined with their knowledge of the locality, is a guarantee that the undertaking is one of the most *bona fide* character, and that it will be carried out with prudence and success.

Detailed prospectuses, and engineers' reports, may be obtained on application to Messrs. MAPLES, MARLES, and PEARSE, solicitors, Frederick's-place, Old Jewry, London; Messrs. SALE, WORTHINGTON, and SHIPMAN, solicitors, Manchester; Messrs. STOCKLEY and WRIGLEY, solicitors, 16, Castle-street, Liverpool; to Mr. JACOB HIGSON, mining engineer, 94, Cross-street, Manchester; or to the secretary, Mr. RICHARD LLOYD, at the offices, 16, Castle-street, Liverpool, to whom also application for shares may be made.

FORM OF APPLICATION FOR SHARES.

To the Directors of the Dee Bank Colliery Company (Limited).
 GENTLEMEN,—Having paid to the bankers of the company £5 per share deposit on shares in the Dee Bank Colliery Company (Limited), I request that you will allot me shares of £100 each in the said company, which, or any less number you may grant, I hereby agree to accept, subject to the Articles of Association, and to pay the call of £5 per share on allotment. I further authorise you to place my name on the register of shareholders for the number of shares which may be allotted to me, and I promise to pay all calls thereon that may be hereafter made, in such manner, and at such time as you may direct.

Name in full.....
 Address.....
 Date.....
 Profession or occupation.....

Dated this day of 1862.

PREFERENCE SHARES.—The NANTEOS AND PENRHUW UNITED MINING COMPANY (LIMITED) having resolved to DISPOSE OF THE FOUR HUNDRED AND SEVENTY-TWO FORFEITED SHARES, the Directors are PREPARED TO RECEIVE APPLICATIONS for the same in the following very advantageous terms, viz.:—£3 per share (£1 12s. paid-up), £1 to be paid with application, and the remainder in two monthly instalments of £1 each, but if they are paid at once a discount of 5 per cent. will be allowed. The above price of 3s. per share will be returned to the holders out of the first profits, and these shares thereafter rank equally for all purposes with the existing ordinary shares. The company is in 5000 shares of £1 each, £12s. paid (of which the above forfeited shares are part), so that there would remain a liability of only 8s. per share to call up.

There are now thirty-four men working in the mines, on tribute, at an average of £5 19s. per ton of ore, including every expense of making it ready for sale, which gives a good profit, while the other operations are likely to lead to further discoveries. The ore ground already laid open has recently been valued by a disinterested practical agent at £7000, and he says "There is an immense quantity of ore standing unexplored in the upper levels, which no doubt will be found equal in quality to that already laid open for working," and that "a small discovery in new ground would enable the proprietors to give dividends." He has "great confidence in good bunches of ore being discovered," and states that there is "an immense quantity of virgin ground to drive into, and the discovery of a good deposit of ore, which is likely to occur in this direction, would enhance the value of the property fivefold." There is an extensive plant of good machinery for all purposes.

In allotting the above shares a preference will be given to the present shareholders, and if no shares are allotted the deposit will be returned in full. Any further information can be obtained on application, either by letter or personally, at the office, No. 117, Bishopgate-street, Within, E.C. J. H. MURCHISON, Managing Director.

January 21, 1862.

THE GREAT DAREN SILVER-LEAD MINING COMPANY (LIMITED).

Incorporated by virtue of the 19th and 20th Vic., c. 47, and 20th and 21st Vic., c. 14. Capital £30,000, in 12,000 shares of £25 each. £1 to be paid at the time of subscribing, and the balance, if required, by instalments of 5s. each.

BANKERS—Bank of London, Threadneedle-street.
LOCAL PURSER—C. M. Thomson, Esq., banker, Aberystwith.
SECRETARY—Mr. Thomas Spargo.
REGISTERED OFFICES.
 224 & 225, GRESHAM HOUSE, OLD BROAD STREET, LONDON, E.C.

The old Daren is one of those ancient mines formerly worked by Sir Hugh Middleton, from which he derived immense profits, with the inefficient and rude machinery then employed to carry on the works. The ore raised from the lodes in this set is extremely rich, producing upwards of 40 ozs. of pure silver to the ton, and about 75 per cent. of lead, thus taking the first place amongst the argentiferous lead ores of Cardiganshire.

This property is considered by mining agents and those competent to judge of its value to be one of the richest in the county, and it is fairly assumed, by statistical calculation, that as soon as the old mines are drained, the various levels laid open, and the Cwm-y-nio lode fully developed, a clear profit of £800 per month will be returned to the company; in fact, the refuse thrown away by the old workers is being worked over at the present time at a clear profit of 10s. in 11.

The mine is held under a lease for 21 years from the present time, at 1-14th dues. Ample machinery is already erected to bring it to a successful issue. The operations are being prosecuted with vigour, under the able superintendence of Captain Matthew Francis, and there is every certainty of its being a rich and lasting mine.

Further particulars, with prospectuses and reports, together with plans and sections, and every information required respecting the property, will be furnished on application to the secretary, at the offices of the company.

THE EAST CLOGAU GOLD MINING COMPANY (LIMITED).

Incorporated with limited liability under the Joint-Stock Companies Acts. Capital £50,000, in 50,000 shares of £1 each. Deposit 2s. 6d. on application, and 5s. on allotment.

No further calls will be made without a special meeting of the shareholders convened for that purpose.

DIRECTORS.
 S. L. WOODHOUSE, Esq. (firm of Woodhouse, Richards, and Co.), 1A, Abchurch-yard, Cannon-street.
 JOHN SAY ARKES, Esq., H.E.C.S., Brunswick Villas, St. John's Wood, W. (Director of the Great Moelwyn State Company).
 JOSEPH OWEN, Esq., Australian Merchant, Sheffield.
 Major CHARLES SANDERS, The Ingrams, Thirsk, Yorkshire (Director of the Chesterfield and Midland Silstone Colliery Company).
 J. B. St. V. JERVIS, Esq., Surbiton, Surrey.

BANKERS—London and County Bank, Lombard-street.
MANAGER AT THE MINES—Capt. G. F. Goble, late from the gold mines in Australia, California, and Brazil.

SOLICITOR—James Bell, Esq., Abchurch-lane, London, E.C.
BROKERS—Messrs. Cavell and Strachan, 20, Cornhill, E.C.
SECRETARY (pro tem.)—Mr. Charles Arkcoll.

OFFICES—2, CROWN COURT, THREADNEEDLE STREET, E.C.

ABRIDGED PROSPECTUS.

The object of this company is to work a grant of a portion of the St. David's gold-bearing lode in the Clogau Mountain, near Dolgelly, in Merionethshire, North Wales.

As an example of the immense value which the gold mines in the district now have and are daily attaining, it is well known that the Clogau Gold Mining Company's shares have risen during the last two years to more than 700 per cent. upon the amount paid upon them, and, although the last dividends were only 60 per cent. upon the capital, yet it was well understood that this was equivalent to 300 per cent. upon the actual outlay spent upon the gold workings.

Similarly, since the discovery and yield of gold in the Prince of Wales Mining Company, the shares have increased in value to nearly an equal extent.

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Reports, prospectuses, plans, drawings, specimen of the gold quartz, and other information, may be had of the secretary, at the offices of the company.

The deposits will furnish the capital requisite to develop the capabilities of the property, and no call will be made without the sanction of the shareholders at a meeting specially convened for the purpose.

Applications for shares to be made to the brokers, bankers, or the company's offices, accompanied by the deposit of 2s. 6d. per share, and the directors do not in any case hold themselves responsible to allot the full number of shares applied for.

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Also: Heard and Son, London: Longman and Co.; the office of the Mining Journal, 26, Fleet-street; and of the author, and of all booksellers.

THE MINING AND SMELTING MAGAZINE.

No. 3, for March, contains:—
 1.—THE MINERS' ASSOCIATION OF CORNWALL AND DEVON. By ROBERT HUNT, F.R.S., Keeper of the Mining Records.
 2.—THE BARNLEY COAL FIELD, LANCASHIRE. By EDWARD HULL, B.A., F.G.S., of the Geological Survey.
 3.—ON THE MEXICAN METHOD OF AMALGAMATION. By JAMES NAPIER, Jun., F.C.S., late of the Guanajuato Mint, Mexico. Illustrated.
 With Abstracts and Reviews; Correspondence by Dr. Percy, Mr. Wm. Baker, F.C.S., and others; Mining and Metallurgical Intelligence; Metal and Share Markets; Accounts of Sales of Ores, &c. Illustrated by a lithographic plate, showing the Forms and Dimensions of the principal types of Blast Furnaces in Great Britain.
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FINANCIAL AND ENGINEERING CONTRACTS.

Notices to Correspondents.

* Much inconvenience having arisen, in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be regularly filed on receipt: it then forms an accumulating useful work of reference.

VENTILATION OF MINES.—Have the goodness to give, in next week's Journal, the address of the party to whom letters of communication on the following subject must be sent:—"A sum of 200 guineas is offered by the National Association for the Relief of British Miners to any engineer, or other person, who projects and carries into effect the best and most effective plan for the full and perfect ventilation of mines."—C. M.—[The office of the National Association for the Relief of British Miners is 23, Regent's-street, S.W., London.]

COLLIERY VENTILATION.—Being in correspondence with the Government upon the subject of "Colliery Ventilation," referred to in my previous letters in the Journal of the 8th and 15th inst., and which will probably result in a speedy investigation of this important matter in detail, I need not at present reply to your correspondent, "M. E.," further than to inform him that he has totally misunderstood my proposal—a reversal of which will perhaps convince him of this; but if not, I shall be happy to discuss any point in doubt, provided he will refrain from his present apparent desire to create obstacles, by foregone conclusions founded upon his own erroneous interpretation of matter conveyed in plain and simple language.—C. COLWELL: Belvedere-place, South-west, Feb. 28.

DISCOVERY OF LEAD.—"E. D. F."—We think not; but the particulars should be laid before a solicitor, for his opinion.

THE CASARA LEAD MINE.—In consequence of the mismanagement pursued by the London board, a resolution was passed in July last to wind-up this company, and Mr. Simpson, Mr. W. Wood, Mr. Lankenshaw, with the secretary, were appointed the liquidators. The mine and plant, which cost the company near 9000l., was sold by auction, on Nov. 7, for 980l., and mark the result. The conditions, by having the deposit of 30 per cent. paid, were not enforced, or the contract signed, and, after a delay of more than two months, the purchase was repudiated, and by a strange arrangement the mine is now placed in the name of a gentleman for the sum of 800l., not 980l., as sold by auction. The lead, to the tune of many hundreds of pounds, has also been sold, and the proceeds not accounted for. I hope the shareholders will wake up from their lethargy, call a meeting forthwith to investigate the conduct of the officials, and to protect themselves, by seeing who is to make good any defalcations; also the loss by the sale, and to place the affairs of the company either in the Court of Chancery or in the hands of competent and independent parties.—T. B.: Regent's-park.

HYDRO-CARBON OIL.—In reply to your correspondent who wishes to know why metallic reservoirs and fountains for containing paraffine and other hydro-carbon oils are to be avoided, I beg to state that metals, being excellent conductors of heat, warm the oils much more and much sooner than glass or porcelain, and thus cause them to volatilise.—B.

DIVIDENDS.—"TYO" should attend the meetings of the companies referred to, and obtain the information he requires.

SILVER VEIN.—Having failed to obtain any information respecting the Silver Vein Mine through its office, I beg you will permit the following questions to be inserted in the Journal, and perhaps some kindly-disposed person, acquainted with full particulars of the mine, may answer through the same medium as they are put. What progress, if any, has been made in different points of the mine since the last general meeting? Has Mr. Squire's process been discontinued, and he dismissed? Has any ore been sold since the last general meeting, and, if so, at what price? Has the steam-engine mentioned in the inspectors and directors' reports, been erected? Has the 18 ft. level been driven so far as to intersect the junction of lodes where the silver gossan was expected to be so abundant? And why did not Mr. Squire publish his promised answer to the Chairman's (Mr. Gould) statement at the last general meeting, where he said that Mr. Squire had deceived himself by thinking that the roasting of the ores was a chemical analysis? If any person will be so kind as to answer the foregoing queries through the Journal I shall feel greatly indebted.—A. SHARROWHOLDER.

SUBSCRIBERS IN AMERICA.—Our friends in America are informed that they can obtain the Mining Journal by ordering it from a bookseller in any of the principal towns of the United States. Mr. Tribune, of Paternoster-row, is the London agent, and sends parcels by every mail to the principal booksellers and news agents there.

THE MINING JOURNAL. Railway and Commercial Gazette.

LONDON, MARCH 1, 1862.

The returns from the Board of Trade for the 12 months ending Dec. 1861, with respect to the imports and exports of the United Kingdom, have been at length issued, and from which we find that the exports for the period mentioned, of articles the produce and manufacture of this country amounted in value to 125,115,133l., whereas in 1860 the aggregate was 135,891,217l., showing, consequently, a falling off of 10,776,084l. figures apply to enumerated and unenumerated articles, collected separately taking them separately it appears that on enumerated articles the decrease is 11,980,940l., the difference between 126,802,795l. in 1860, and 114,821,855l. in 1861, while unenumerated articles give an increase of 1861 over 1860, the declared value in the latter year being 10,230,262l. against 9,088,432l. in 1860.

The relative position of exports more especially identified with the ironing industry is the same for the 12 months, as shown from time to time for the shorter periods—one-fifth, more or less. Of the total declared value of 10,776,084l., as already explained, 2,928,268l. is represented by the total for 1861 being 25,714,468l., against 28,642,736l. in 1860. In Coals and culm give an increase, as does also machinery of all kinds, under every other head there is a loss, as explained in the tabular statement in another column. There is, consequently, nothing in these statements to discourage, but, considering the peculiar position in which several countries have been placed, a much more unsatisfactory state of things than have been anticipated. The iron trade has necessarily suffered more particularly, but the various projects now afloat for railway and other enterprises, in localities where England must be looked to for the supplies, soon give a better tone to this branch of trade.

The balance-sheet of the precious metals for the year is also again issued. We imported to the extent of 18,747,045l., and exported 20,811,000l., consequently leaving this country 2,064,603l. on the wrong side. Of the we received 12,163,937l., and sent away 11,238,372l.; and of silver imported 6,583,108l., and shipped 9,573,276l.

Taking the principal countries separately with which we have had change in this respect, our greatest loss was with Egypt, in transit to China and India, and amounted to 8,058,329l.; the imports being 18,005l., against 8,076,334l. in exports. With the United States our balance was 7,315,270l.; having received only 66,683l., whereas we exported 7,381,953l. Spain took 650,246l. and sent 20,963l., leaving country in the wrong to the extent of 629,283l. Portugal, likewise, required 337,562l., and returned 125,907l., leaving a deficit of 211,655l. in her favour. From countries to which we made no sale in specie or bullion, Mexico and South America gave us 6,715,188l. Australia, 6,331,828l.; West Coast of Africa, 79,829l.; Gibraltar, 51,341l.; Malta, 34,631l.; Turkey, 29,067l., and British Columbia, 51,282l., together no less than 14,231,528l. On the other hand, we transacted specie and bullion without returns of this nature, but to a very moderate amount, as compared with the imports under similar circumstances the total being only 1,050,864l., of which 645,944l. was to British America, leaving merely 404,920l. for the other places; namely, 168,100l. to the Brazils, 143,464l. to South Africa, and 91,643l. to the West Indies.

Of the vessels occupied in the export trade of the country, we find of the 48,469 so engaged, with an aggregate burthen of 11,318,000 tons, 5705 were dispatched to British possessions, with a collective tonnage of 2,381,882; and 42,764 to foreign countries, with an aggregate tonnage of 8,936,211; the English, consequently, giving an average of about 180 per vessel, and the foreign about 208 per vessel.

An important paper by Mr. SAMUDA, the shipbuilder, "On Iron-Clad Ships," has been the subject of very animated and interesting discussions at five successive sittings of the Institute of Civil Engineers, and of the highest eminence in that profession, amongst them FAIRBAIRN, Mr. SCOTT RUSSELL, Mr. BIDDLE, Mr. HEMANS, and SAMUDA, have taken part in the deliberations. The naval profession is amply represented by the distinguished names, amongst others, of Sir GEORGE SARTORIUS, Sir EDWARD BELCHER, and FITZROY, Captain HALSTED, R.N.; while the governmental departments have been defended by Sir JOHN C. HAY, Chairman of the Commission for enquiring into the capacity of iron-plates to resist modern projectiles, of which FAIRBAIRN and Mr. POLE, who both took part in the discussion, were members. The shipbuilding establishment at Woolwich was also very ably represented in the debate by a gentleman connected with the department there, who exhibited at the meetings correct and well-contrived drawings, representing the actual effects of the ARMSTRONG bolts and plates; he also presented to the Institute some very remarkable collections of marine shells, taken from the bottom of an iron ship at Woolwich, which had been in commission two years—a result which he conceived to be inadmissible as an exclusive material for the bottoms of iron ships of war.

Mr. SAMUDA's paper recommended ships of war to be built of iron, and it was accompanied by a drawing and specification of a vessel, presenting, as he conceived, advantages over the *Warrior*, in tonnage was to be somewhat less, with the same engine-power; but the use of being, like the *Warrior*, wholly unprotected by iron-plates for the whole of space at her bow and stern, he proposed that she should be covered. In his design it was intended to afford greater strength to the iron ribs, and by binding those ribs together on a principle analogous to that adopted in the iron girders used in railway bridges. *Warrior* was, of course, subjected to very severe criticism, particularly Sir G. SARTORIUS, who had previously expressed his opinion in a bearing his signature published in the *United Service Magazine*. Sir HAY gave some highly instructive details respecting the proceedings of the Commission, at the head of which he had been placed. While acknowledging the vast number of plans and suggestions which the Commission had received from all quarters, he begged to assure the public that the duties were limited and defined, and that funds had not been placed at disposal for merely experimental enquiries, or for testing the feasibility of every proposition submitted to them. He was prepared to state that the Commission had arrived at that soft tough iron which was the subject of a given thickness, presented the most certain and most approved mode of resistance. He further detailed some interesting trials respecting the power of shot on a succession of iron-plates laid close one against the other, as contrasted with the same thickness of iron in a solid plate, which showed very remarkable results in favour of the latter. While Sir G. BELCHER explained some of the incidents of his experience in the Seas, as to the necessary strength and solidity of ships, he, together with the other naval officers present, deprecated on the part of the government the necessity of completely screening British seamen from the necessity to protect them from the ingress of shells as much as possible, but there was, they conceived, no necessity for making ships unmanageable at sea by vast weights of iron, for the purpose of making them invulnerable in action.

Admiral FITZROY, while concurring in this view, suggested that Government experiments had not as yet been applied to this purpose, to ascertain what would be the comparative effect of shot on iron plates at certain distances from each other, with timber or other lighter material intervening, as he conceived that the force of the blow on the iron every successive plate would be very materially spent and weakened before the shot reached the next. Sir JOHN HAY stated that such experiments were in contemplation, but if he could venture by anticipation to form an opinion, it would be found that spaces intervening between plates would not materially influence the result as to the superiority of this plate over a succession of thinner ones of the same thickness, when combined. To this view Mr. FAIRBAIRN added the great weight of authority, and stated that he had early formed an opinion, which his day's experience had confirmed, that sufficient attention had not been devoted to strengthening the upper decks of iron ships, and to the necessity he attributed many of the sad catastrophes which had occurred. He entered into some interesting details of the experiments he had witnessed of the effects of heavy shot on iron plates backed by wood, concrete, and iron. The wood was beaten in, the granite was broken

the concrete crumbled, and the iron alone furnished sufficient support. He announced that the Commission were satisfied that they had at last succeeded in obtaining iron plates which, when backed with iron, were able to resist any modern artillery as yet discovered.

HALSTED, R.N., went into details as to the effects of the heavy iron plates on the *Trusty*, and while he admitted that her hull was rotten, and did not, therefore, sufficiently support the plates, he, therefore, came to the deliberate conclusion that British sea-warriors would fight their ships at sea with much thinner plates than those which the Admiralty were adopting, and that there was no necessity whatever for casing them in the heavy iron armour which rendered such ships unmanageable and unsafe. Several gentlemen suggested, and exhibited, the use of fastening iron plates on the sides of ships by ingenious modifications of screws and bolts. Mr. POLE, a member of the Commission, stated that thin plates of steel had been found to present more resistance than plates of the same dimensions; but when thick steel plates were used proved to be brittle and inefficient. He stated that the required quantity of iron of equal excellence were found to be in proportion to the quantity of working to which it had been submitted, and he instanced as an example the extraordinary power of sustaining weight which the very thin plates of steel were capable of enduring, which he attributed to various processes to which it had been subjected. Mr. BIDDLE ably aided the discussion, and, deprecating the official mystery with which Government departments sought to invest public questions of such vast national importance, asserted the right of the Institute freely to discuss the subject, and anticipated highly valuable results from the discussion.

It may be inferred from the tone of the opinions expressed, that the engineers were in favour of ships constructed entirely of iron, while the Admiralty departments, and the naval profession, seemed to prefer wooden vessels. Mr. SAMUDA's paper had been subjected to very severe criticisms, but his reply appeared to be successful. He maintained his own opinions, and defending his own plan, he made a very important admission—that in his judgment the Admiralty were wisely and prudently in the course they were adopting, that of reducing old three-decker wooden ships to one or two decked ships, and covering them with iron plates. As the performances of the *Warrior* had been mentioned, he favoured the meeting with a gratifying announcement that the best reason to know the statements which had appeared in some of the public papers respecting her inefficiency as a sea-going ship were untrue. The Admiralty had not received any reports to that effect. On the contrary, the official statements of her officers had been, although she experienced very severe weather on her recent voyage, that she had proved herself (but with diminished speed) in safety, comfort, a fair-weather vessel. Mr. SAMUDA, while sustaining his improved model, added his emphatic opinion that the *Warrior* was a very fine ship.

Mr. HANDEL COSHAM, F.G.S., delivered a very interesting lecture at Bristol Mining School on "the Hartley Colliery Accident, the Value of Mining Schools, and the Arrangements necessary for the Safe and Economical Working of Mines." The lecturer commenced by referring to the terrible accident at the Hartley Colliery, and remarked that it behoved to learn all the lessons that such a sad disaster was fitted to teach, so far as possible the curse might be turned into a blessing. There was a wide-spread feeling that a very large number of the accidents that occurred in our collieries might be prevented by the adoption of more stringent rules and regulations for the government of mines, and there could be no doubt but it was the duty of Government, Government Inspectors, proprietors, and the public generally, to see whether any and what means of safety could be adopted with a view to prevent the terrible disasters from which we had lately suffered. He was not without hope that the terrible Hartley accident, the most singular and the most fearful in the history of mining, would result in the adoption of precautionary measures which would tend to prevent the recurrence of such fearful and painful events; it was his conviction that nothing would so much tend to lessen the number of accidents in mines as the establishment of mining schools in every district; because every one knew, who had had any experience in mining, that it was possible to erect the best machinery, and to lay out the works on the most approved and best plan both above and below ground, and also to adopt the most stringent and well-considered rules, and after this had been done the carrying out had to be entrusted to men, some of whom had but little opportunity of obtaining education and special instruction relative to their calling in life, and the result often was the neglect and inattention to duty, which often eventuated in a sad loss of life. The aim of the Bristol Mining School was to place within the reach of those who wished to qualify themselves for places of trust in our mines an education of an eminently plain, practical, and useful kind.

The lecturer then referred to the subject of future legislation relative to the subject of colliery management. He was of opinion that it was very difficult to draw the line exactly, and say how far legislation relative to control of industrial pursuits should go. His own impression was that there had been too much over-legislation than under-legislation, and that adoption of laws much more stringent than those under which collieries now worked would tend to increase rather than diminish the accidents. The lecturer then explained the present position of the law with reference to the inspection of mines, and referred to some of the suggestions which had been made since the Hartley Colliery accident, some of which were grossly absurd, but there were some that were deserving of attention. The adoption of two shafts in every colliery, and placing the power in the hands of the Inspectors to order anything to be done that they deemed right, was an appeal on the part of the coal owners. Relative to the first point, was himself in favour of two shafts, but thought that its compulsory enforcement by law in all cases would be arbitrary and unjust. With reference to the power in the hands of the Inspectors to order what should be done, or, in other words, to have all the power and the responsibility, he believed that such a law would be fraught with the most pernicious results. He then referred to the subject of safety in the working of mines, and remarked that safety and economy were most intimately associated—in fact, they were two branches of the same subject. Experience proved that true economy could only be secured by the adoption of the best means of safety, and that where least was taken of the health of the miner those collieries were the least profitable to the proprietor. He thought that discipline and order, the adoption of good rules, the appointment of competent overseers, and good and kept plans, were absolutely necessary for the safe and economical working of all collieries.

The lecturer then noticed some of the special arrangements that were necessary for safety and economy, and referred to them in the following order:—1. Surface arrangements. 2. Shaft arrangements. 3. Under-ground arrangements. He preferred double cylinder high-pressure engines, working with two-tubed Cornish boilers, and flat wire-ropes, the depth was more than 200 yards. For pumping-engines he thought low-pressure three-valve condensing beam-engines were the most economical and safe. He would venture to suggest the following points relative to beams:—That every existing beam be strapped and braced with light-iron tie-rods, so as to protect it in case of breakage, and that it be desirable in the erection of all future pumping-engines to place a beam below the engine if possible, so that if it broke it should simply fall into the grave of mason work provided for its reception. Such an arrangement would effectually meet and provide against the recurrence of the Hartley catastrophe.

The arrangements necessary for shafts were then noticed. He thought every shaft should be walled with stone or brickwork, as lining shafts with timber was an expensive, wasteful, and most unsafe plan, and ought to be sanctioned. No shafts ought to be worked without guides, and these could be used were wooden ones; the wire-rope guides may, perhaps, be better than nothing, but that was all that could be said in their favour. The subject of safety-cages had received a good deal of attention, in some cases he thought they may be useful, but he did not feel very strongly impressed with their advantages, as all arrangements that were made for the purpose of providing against a contingency that occurred so very occasionally as the breaking of a rope would almost sure to be out of order when required. He would recommend the adoption of steam-brakes (Ogden's) on winding-engines, as he believed their adoption would save many valuable lives in a year, and much valuable property.

The arrangements necessary for safe and economical working underground were then noticed, and the first point that he took to be essential was, and systematic supply of fresh air was absolutely necessary to safety and economy. Mr. COSHAM then referred to the systems of long wall and pillar and stall working, showing by plans how much easier it was to

ventilate the former than the latter system, and also how much more economically and safely the workings could be conducted. The subject of underground roads was important, and had much to do with safety and economy. The application of machinery underground was a large and important question. As a rule, he took it that an engine costs more than double to erect and keep in order under than above ground, and this must always be taken into consideration in calculating results. In working coal to the rise, self-acting inclines, worked by simple wheels with brake attached (as per model which Mr. COSHAM exhibited and explained) were the best and cheapest; and assuming an angle of 20 degrees, he thought that 100 yards would be found as far as such inclines could be carried with safety.

In conclusion, Mr. COSHAM expressed his great pleasure at the result of the appeal to the citizens of Bristol on behalf of the Hartley sufferers. He believed that the local fund would reach nearly 2000*l.*, and the national fund 50,000*l.*; it was a grand and noble testimony to the voluntary benevolence of our people. But he would suggest, as there will be a large surplus after amply providing for the widows and orphans at Hartley, that it be applied to some National Fund, to provide for the relatives of those who may in future be killed in our coal mines. For do what we may, accidents still would occur, and when they did it would be some mitigation to our sorrow to know that the relatives of those killed are provided for. He thought that the working collier might subscribe to this fund his pence, and the coal owner his pounds, and the public, who so largely benefited by their joint exertions, some of their surplus wealth; and if this should be one of the results of the Hartley catastrophe, then out of much evil good would arise.

Some very interesting information was brought forward at a recent meeting of the Manchester Geological Society, both in the papers read and in the subsequent discussion. Mr. ANDREW KNOWLES read a paper "On the Bank Top and Hagside Pits, and the Proving of Faults." From his experience in the Lancashire coal field, he concludes that the faults in that district are dislocations, whether they are large or small ones; by this he means that the strata are broken up, and that the coal and other measures are often found the same on each side of the fault-vein. The dislocation appears to have been effected by some cause which has not altered the thickness of the strata or changed their nature. Mr. KNOWLES recommends those engaged in mining operations to proceed thus in proving faults. He assumes that the workings of a colliery require extending in a certain direction in unknown ground, and that after proceeding in the direction to a given point a fault is met with. It is easily known whether it is a down or upthrow; if the former, the coal not infrequently dips a little for a short length before you arrive at it; if the latter, it often rises to it. But supposing the fault be arrived at without any previous indication, the direction is generally known by the way in which the strata, or two sides of the fault-vein, commonly called the "slippy-partings," point. If a down fault is met with the direction is away from you; if up, you touch the vein first at the floor of the place you are driving. If the throw be down, and the fault be found in a level that has been driven to it, Mr. KNOWLES thinks the best way to prove it is to go down in the vein; in doing so it is necessary, in proceeding, to lay it bare on the furthest side, to be certain not to pass the coal, for if the two sides of the fault happen to widen out from each other, the fissures being filled up with debris, forming a kind of conglomerate or aggregation of crumbled strata from above, it is impossible to go by it, this material hiding it from view. When the depth of the throw is ascertained, a tunnel to the rise, keeping quit of the fault, will lead to the coal again, when the level can be proceeded with. If a fault be met with in driving a downthrow, and it crosses the place driven diagonally, the best way to prove the extent of it is to go down the vein at right-angles to the side of the brow, until you find the coal; it will depend upon which side it is found whether the off-set would have to be made to the right or left hand. Mr. KNOWLES recommends the use of steel drills instead of those made of iron, with the cutting part of steel; it is found that the blow of the hammer tells more effectually in boring when the drill is all steel. With regard to the relative merits of iron and steel drills, the President (Mr. JOSEPH DICKINSON) remarked that the question was highly important. Ordinary iron does not produce so good an effect as the best iron, when the iron is tipped with steel, and Mr. KNOWLES informed them that a drill made entirely of steel produced the best effect. Mr. F. CHARLTON considered there was no doubt about it. Mr. G. CHARLTON said there was some stone which could not be cut through except with steel drills. Although these drills were more expensive in the first instance they found them far more economic in the end. Mr. W. BLACKBURN confirmed this view, and stated that sinkers often have an understanding that they are to be supplied with steel drills.

At the conclusion of this discussion, Mr. JOSEPH GOODWIN read a paper on the "Ventilation of Mines," in which the disadvantages of the single shaft system is fully pointed out. It may be contended, he says, that owners of collieries are the best judges upon the question as to the number of shafts required, and the system of getting coal to be employed. For his own part, he would not dispute such right were those who worked upon such principles the only ones to suffer; but when those who are desirous of working upon a better plan, and who spare no expense to give security to the workmen, and afford greater protection to their own property, feel so acutely the effects of the misdeeds of others not so disposed, it becomes a question upon which all have a right to speak, and to use their efforts to put an end to a system so fraught with disastrous consequences. Mr. BINNEY said he had heard this system of trusting to one shaft condemned for twenty years. Some two years ago he was advised to sink a shaft 100 yards deep with a brattice, but he would not have the responsibility on his conscience if any accident happened, and he refused to do it. If a fire took place some of the men might escape, but it would be a miracle if they did so. He doubts whether one shaft is cheaper than two. Setting 100 or 200 acres of coal, a pair of pits would be cheaper in the end. In Scotland, where you see a great number of these brattice pits, the repair of the brattices is a constant source of expense.

MANCHESTER GEOLOGICAL SOCIETY.

Mr. J. DICKINSON (President) presided over the usual monthly meeting of this society, held on Tuesday, in the Museum, Peter-street. The attendance was much above the average.

PROPOSED ACCIDENT FUND.—Mr. E. W. BINNEY, F.R.S., called attention to the fund which was being got up in London for the relief of widows and orphans of coal miners. In London an association was being formed for the disposal of a fund to be raised from various sources; but he contended that a local fund, extending over Lancashire and Cheshire, being more homely in its character, would be more beneficial. If the public, as well as those connected with mines, contributed to the fund, it could not be said that those who participated in its benefits were dependent upon charity.—The President said that nearly 40,000*l.* had already been subscribed in the case of the Hartley accident; but the miners in that neighbourhood had expressed their preference to a local fund over one of more national character. There was ample scope for such an association in Lancashire and Cheshire, and they were doubtless the proper parties to bring the subject before the public.—Mr. BINNEY said there was no doubt subscriptions might be obtained from the general public, but proprietors and colliers should also contribute.—Mr. FLETCHER said that in all previous cases of accidents there had been plenty of funds provided in the neighbourhood, except in the recent terrible accident at Hartley, which was an exception to the general rule. The whole nation should not be called upon to subscribe to this fund, as there was generally a disposition on the part of colliery owners to lend powerful assistance.—The President pointed out that the advantage of a fund would be to provide for accidents of a minor character, and which, not coming before the public, left the friends of the sufferers wholly unprovided for.—Mr. BINNEY thought the proposal in London was that a halfpenny should be paid upon every ton of coal that came out of the mine.—Mr. J. ATKINSON: A halfpenny per ton on the sixty millions of tons of coal produced in this kingdom in the course of the year would realise something like 125,000*l.*—In the course of a discussion, it was stated that the question would be discussed in London before their next meeting, and, upon that understanding, the matter was allowed to stand over.

PATENT SAFETY CAGE.—Mr. BINNEY read a paper, communicated by Mr. Landell, on "Ayrton's Patent Safety Cage;" but no discussion followed, the Chairman merely observing, in referring to a remark in the paper, that other inventions had not proved failures, as Owen's cages in this county had hitherto worked well and given great satisfaction.—A vote of thanks was given to Mr. Landell for his contribution.

VENTILATION OF MINES.—The President then read a paper by Mr. J. J. ATKINSON, Her Majesty's Inspector of Mines for the South Durham district, "On the Gases met with in Coal Mines, and the general Principles of Ventilation." The paper was of a most valuable character, and especially useful to underlookers and young colliery managers. It stated that a variety of gases were to be met with in coal and other minerals in coal mines, and they were capable of causing the death of men and animals who breathed them in their pure and undiluted state. Some of the gases given off in coal mines, when mixed with certain portions of air had violently explosive natures. There were seven kinds of safety lamps, in addition to Sir Humphry Davy's.—A cordial vote of thanks to the author of the paper was passed.—Mr. GOODWIN said the main principle to be urged upon, to promote effective ventilation, was the removal of obstructions. It was a fact to be regretted that at all times the limit of air-courses was not adhered to. An opinion often expressed was that carburetted hydrogen or fire-damp was not injurious to health and life. But it was so, and hence there was an additional reason why they should strive to get rid of it. He

believed the gases could be removed as fast as they could be generated.—The President said there was no higher authority in the country on mining matters than Mr. Atkinson, the writer of the paper. They would generally find that the line of division where the fire-damp went was not, perhaps, drawn so finely as if it were done with a ruler; but there was a margin by which they could test the presence of fire-damp by the cap on the flame of the lamp.—Mr. GOODWIN said the paper the gas the higher it was in position.—Mr. BINNEY said the gas, according to the law of diffusion, ought to be dispersed in all directions.—Mr. GEORGE CHARLTON, general manager of the Dukinfield Pit, said that, with regard to detecting the existence of gas, it could be detected in the safety-lamp when a small portion of carburetted hydrogen was there. If the first warning were noticed, and a sufficient ventilation attended to so as to remove the gas, explosion could be reduced to a very small minimum. The friction in mines was the greatest point to be attended to. In proportion as friction was reduced, ventilation was increased. In their deep colliery, at Dukinfield, they made it a point of having no open lights beyond the shaft levels; and from that circumstance, from the opening of the pit to the present moment, there had been no explosion of gas.—The usual thanks to the President brought the proceedings to a close.

GEOLOGICAL SOCIETY OF LONDON.

At the annual general meeting on February 21 (Sir R. I. MURCHISON, V.P.G.S., in the chair), the SECRETARY read the reports of the council, of the museum and library committee, and of the auditors. The society was shown to be in a satisfactory state, as to finances and the number of fellows. The reports were adopted and ordered to be printed.

The CHAIRMAN then announced the award of the Wollaston Gold Medal to Mr. Robert A. C. Godwin-Austen, F.R.S., F.G.S., for his long-continued and valuable researches in geology, particularly into the ancient geographical and hydrographical conditions of the Western European area in the palaeozoic, mesozoic, and cenozoic periods; also for his acute and judicious elaboration of the theory of the presence of carboniferous rocks at a moderate depth beneath the South-east of England.—Mr. GODWIN-AUSTEN having replied, the CHAIRMAN proceeded to announce the award of the balance of the proceeds of the Wollaston Donation-fund to Professor Oswald Heer, of Zurich, in recognition of his valuable labours in the elucidation of the fossil plants and insects of the tertiary strata of Switzerland and Croatia, and especially of the fossil Flora of Bovey-Tracy, in Devonshire.

The CHAIRMAN next, having read a letter from the President, regretting his unavoidable absence in Italy, expressed his sense of the great services rendered to the society since its foundation by Mr. Leonard Horner. He then proceeded to read an obituary notice of the late Dr. FITTON.—Mr. W. W. SMYTH, secretary, read obituary notices of the late Rev. J. S. Henslow, Mr. J. MacAdam, Mr. Eaton Hodgkinson, Sir C. Fellows, Prof. Necker, and others.—Finally, Prof. HUXLEY, secretary, read an address, the principal objects of which were—to urge upon geologists and palaeontologists the necessity of considering the logical basis of several of their most generally accepted conceptions; such as the doctrine of Geological Contemporaneity, and the assumption that the fossiliferous rocks are coeval with the existence of life on the earth,—and to test the ordinary hypotheses of the progressive modification of living forms in time by positive evidence.

The ballot for the council and officers was taken, and the following were duly elected for the ensuing year:—President: Prof. A. C. RAMSAY, F.R.S.—Vice-Presidents: Sir P. de M. G. Egerton, Bart., M.P., F.R.S.; Sir Charles Lyell, F.R.S.; John Carrick Moore, F.R.S.; Prof. John Morris.—Secretaries: Prof. T. H. Huxley, F.R.S.; Warrington W. Smyth, F.R.S.—Foreign Secretary: W. J. Hamilton, F.R.S.—Treasurer: Joseph Prestwich, F.R.S.—Council: John J. Bigsby, M.D.; Sir Charles Bunbury, Bart., F.R.S.; Robert Chambers, F.R.S.; Sir P. de M. G. Egerton, Bart., M.P., F.R.S.; Earl of Enniskillen, D.C.L., F.R.S.; Hugh Falconer, M.D., F.R.S.; W. J. Hamilton, F.R.S.; Leonard Horner, F.R.S.; Prof. T. H. Huxley, F.R.S.; John Lubbock, F.R.S.; Sir Charles Lyell, F.R.S.; John Carrick Moore, F.R.S.; Edward Meryon, M.D.; Prof. John Morris; Sir R. I. Murchison, F.R.S.; Robert W. Mylne, F.R.S.; Joseph Prestwich, F.R.S.; Prof. A. C. Ramsay, F.R.S.; G. P. Scrope, M.P., F.R.S.; Warrington W. Smyth, F.R.S.; Alfred Taylor, F.R.S.; Rev. Thomas Whitaker, M.A.; S. P. Woodward.

At the meeting to be held on Wednesday, the following papers will be read:—On the Glacial Origin of certain Lakes in Switzerland, Wales, Scotland, and elsewhere. By Professor A. C. RAMSAY, F.R.S., President of the Geological Society.—On the Permian Beds of Westmoreland, Cumberland, and Dumfriesshire. By Professor R. HARKNESS, F.R.S., F.G.S.

OUR MINERAL PRODUCTS, AND THE EXHIBITION OF 1862.

This class, which includes mining, quarrying, metallurgy, and mineral products, consists of 334 exhibitors. The Aberdare Coal Company will send specimens of their steam coal from their rich Four-feet and Nine-feet seams; coals will also be sent from Ballylehan, in Queen's County, Ireland; Messrs. Barber and Walker will contribute specimens of Nottinghamshire coal; Mr. Barrow, of the Staveley Works, Derbyshire coal; Messrs. Brown and Jeffcock will illustrate the Yorkshire coal fields; Messrs. Brown and Rennie the district of the blackband; the famous Buttery Iron Company will show a section of a coal pit at Alfreton; "preserved coal" will be exhibited by the "Crown Preserved Coal Company;" the Farnley Iron Company, near Leeds; Messrs. Archibald and Son, of Kilmarlock; the Hon. James Howard, Messrs. Renwick and Nicholson, the Rhos Colliery Company, Rhymney Coal Company, Messrs. Shepherd and Evans, of Aberdare, the Ynicedwyn, and the Ystalyfera, and a number of other Welsh companies, with equally unpronounceable names, are also among the exhibitors of this useful mineral.

Iron, lead, copper, and their ores will be exhibited by Messrs. Woodhouse and Jeffcock, of Derby (iron); Mr. Williamson, of Denbigh (lead and zinc); the Wicklow Copper Company, iron pyrites, rich in sulphur; a local committee at Tavistock have formed a fine collection of copper, tin, lead, iron, and other ores, found in Devon and Cornwall; from Cardiganshire will come lead ores; the Weardale Iron Company will show iron, steel, and other minerals; the ironmasters of Glasgow have formed a complete collection of the blackband and other ironstones from which pig-iron is made; the Sellarhill Company will exhibit the minerals from which the famous cold-blast iron is made; the Parkside Iron Company will exhibit the hematite iron ore, with section showing stratification and workings of the mine; Mr. McCall, of Limerick, has promised to send magnetic iron, obtained near Limerick, similar in quality to that of the fine metal of Sweden; Mr. Wynn, M.P., will send spathic and other iron ores from Exmoor Forest; the Duke of Marlborough is an exhibitor of iron ore from the Fawley Mines, in Oxfordshire; the East Cornwall Arsenic Company send a magnificent collection of this mineral poison in every stage and variety; there will be zinc ores from Silvermines, Tipperary; and the Governor and Company of Copper Miners in England will also make a most interesting display. The Dowlais Company, the Buttery Company, the Low Moor, and many of the leading ironmasters, will exhibit specimens of metal work in different stages of its manufacture.

The quarries of the United Kingdom will be represented by many fine specimens. A monolith granite obelisk, 25 ft. in height, from the Cheesering Granite Company, Cornwall, with fountain at its base, designed as a memorial of the Great Exhibition, will occupy a prominent position in the transept, and upon its sides will be inscribed the names of the cities and countries represented at that great gathering of the world's industry. An obelisk of polished grey granite, 30 ft. in height, beautifully formed in its outline, the lower portion, spreading with a curve to meet the pedestal, and its sides ornamented with sunk spaces, like stars, and various decorative lines, will also be placed in the transept, on the British side. A fine sculptured monument, by Steke and Co. of Bradford, Yorkshire, will illustrate the capabilities of the Bolton quarries; griststones of colossal dimensions are promised from Messrs. Kell and Co., of Gateshead; the Marchioness of Londonderry contributes three immense blocks of Pomeroy stone, and a model of Seaham harbour and town; the Duke of Northumberland will exhibit specimens of freestone from Alnwick, Denwick, Rothbury, Harlow, and Thorngrafton quarries; Messrs. Vint Brothers, near Leeds, are to send a fine obelisk in stone, cut out of the Gazyly quarries. From the deep recesses of the Blue John Caves, of the Peak district, near Castleton, will be sent specimens of the beautiful fluor-spar.

The following is a description of the specimens of mineral produce forwarded to the Great Exhibition from South Australia:—

A very choice collection of malachite and other copper ore, specimens, contributed by Mr. F. S. Dutton, Hon. Sec. of the Committee for the Great Exhibition in Adelaide. Samples of refined copper, contributed by the English and Australian Copper Company. Samples of copper ores from the Burras Burras Mines. Samples of copper ore from the Great Northern Mining Company. [Company.] Samples of lead and copper ores, and one pig of lead, from the Wheel Ellen Mining Company. Samples of copper and lead ores from the Cumberland Mining Company. Samples of copper ores from the Wallaroo Mine—the Wombat and other shafts—the property of Capt. Hughes and Messrs. Elder, Stirling, and Co. Samples of ore from the Wirrawilka Copper Mines. Samples of copper ores from the Worthing Mining Company. Copper from the Preammina Mine. Collection of copper ores from Mr. William Rolison, Koorlinga. Copper ores from the Duryan Mining Company. Samples of copper ore and refined copper from the Kapunda Mines. Samples of copper ore from Mount Rose Mine. Samples of minerals from Dr. Englehardt. Case of minerals from Mr. F. S. Dutton. Samples of polished marble and slate, from Mr. J. Kellet. Samples of smelted ore by Rodda's patented process, from Mr. R. V. Rodda. Superb pieces of malachite from the Burras Burras Mines, exhibited by Mr. R. S. Crabb. Silver-lead ore from Mr. Singleton's mine, the Adelaide. [Adelaide.] Some splendid blocks of ruby ore from the Yudanmutana Mines. Specimens of Burras Burras ore, from Dr. Maurus, Koorlinga. Large block of copper ore, supposed to weigh 5 or 6 tons, from the Cornwall Mine. Two slabs of slate, 6 ft. square each, from the Mintaro Slate Quarries, from Mr. Thompson, Mintaro. Gold specimens of South Australia, the property of Mr. J. B. Neales.

We are happy to announce the arrival of our respected friend, Mr. F. S.

DUTTON, M.P. for East Adelaide, who has been appointed hon. secretary of the committee, and who is sure to pay such excellent attention to the interests of his colonial friends as to merit their warmest thanks on his return.

REPORT FROM NORTHUMBERLAND AND DURHAM.

FEB. 27.—The Coal Trade continues extremely dull, and prices, especially in the London market, are very low. A meeting of the Blyth Harbour and Dock Company was held on Saturday, in the company's offices, Newcastle (Mr. H. Hinde in the chair). The company continues tolerably prosperous, and a dividend of 4 per cent. was declared on the capital account. But the works require extension, and the formation of a dock is most urgently required. A further sum of 20,000*l.* is required for this purpose, the result of which would be a great increase in the trade of the port, and greatly increased profits to the shareholders of the company, as the harbour is most excellently situated, in the midst of the steam-coal district, and only some increased facilities for shipping are required to increase the trade of the port to an indefinite extent.

The half-yearly meeting of the Blyth and Tyne Railway Company was held at Newcastle, on Monday (Mr. Joseph Laycock, Chairman of the company, in the chair). The Chairman, in moving the adoption of the report, congratulated the shareholders upon the increase of their receipts, and at a time, too, when other railways had not been able to maintain theirs. They were about to proceed with the formation of the branch line from Hotspur-place to Newcastle, and also with the branch to Walbottle Colliery. It might appear to people unacquainted with the traffic of the district that the line to Walbottle Colliery was through a district in which it might not be prudent to carry a line, but they had an arrangement with a very extensive colliery there that would secure to the company a remunerative return, if that particular branch were made. With the continuation of their line from Hotspur-place to Tynemouth they did not think it right to proceed at present, as they saw very little prospect of the River Tyne Commissioners proceeding with the dock at the Low Lights. The construction of that line was contemplated with the view of accommodating the traffic to these docks when made. The non-construction of those docks was detrimental to the interests of this company, for they found that a large portion of the traffic arising from the produce of the northern coal field was being abstracted by Sunderland, because they had there better dock accommodation than they had in the Tyne. The great source of traffic, as they were aware, was from the coal of that district, and unless they had a natural and easy outlet for that coal their traffic could not go on. If those collieries round about Blyth Harbour could not be accommodated upon the Tyne for the shipment of their coal, there was no doubt that those parties would soon have docks made to suit themselves. It might be a subject for the consideration of the Blyth and Tyne Company whether docks of that description should be at Blyth or not. The report was adopted, and dividends declared at the rate of 10 per cent. on the original preference shares, and 9½ per cent. on the ordinary and extension shares.

At Ryhope Colliery two staples are to be sunk between the shafts, in order to draw off the water. Nearly 700 men and boys are now employed at the colliery.

A fatal accident occurred at West Cramlington Colliery, on Tuesday. Oswald Simm, a railway man, was coming down one of the inclined planes when the train of rollers commenced run, and by some means he, unfortunately, stepped on to the wrong side, and was knocked down by the set of tubs, 16 in number, all of which passed over him, dragging him a considerable distance. Simm was taken home, but only lived about two hours afterwards. Two men were about 20 yards off the spot when the accident occurred, and it is thought that he had just stepped out of the refuge hole, as his hammer was found in it. The deceased was upwards of 60 years of age.

The machine for tunnelling, lately manufactured at Messrs. Hawks, Crawshaw, and Sons' Works, Gateshead, has been subjected to several trials lately in the Clanton's Quarry; it is a complicated and ponderous machine, weighing at least 50 tons. The machinery which it is very complex, but the actual working parts in the face of the rock are simple enough. Strong metal arms are fixed to a central shaft, and attached to those arms are strong teeth or cutters for the purpose of excavating the rock; the diameter of those arms and teeth, and consequently, the proposed size of the tunnel, is 7 ft. Only short trials have as yet been made, so that no opinion can be given as to its ultimate success; but we understand that when at work its progress is at the rate of 6 in. per hour, but it is expected that a full trial will be made on Saturday first, when its capabilities will be fully tested, and until that is done it would be premature to give any opinion as to its merits.

REPORT FROM MONMOUTH AND SOUTH WALES.

FEB. 27.—There is a slight improvement in all branches of trade within the last few days. Cardiff, Swansea, and Llanelly are full of activity, and the quantity of coal shipped is greater than has ever been known. Newport also evinces signs of activity, although not so much as the sister ports. Large shipments are being made at the Briton Ferry New Docks, and matters are decidedly looking up in that locality. Several of the ironworks are working full time, which has not been the case for some time past. The Blaenau Company have sufficient orders on hand to keep the works going for months.

The Ebbw Vale Company's Works at Pontymoile are showing increased activity. Two truck loads of block tin have arrived at the works, and it is expected that two of the mills will commence working on Monday. This is cheering news to a neighbourhood which has so long suffered from the slackness of the iron and tin works. The recent decree which appeared in the *Moniteur*, by which several qualities of iron, &c., are admitted into France at a reduced duty, will it is confidently stated, have a most beneficial effect upon the iron market of this country. It is quite evident that new fields for exporting our coal and iron must be found somewhere, or else it is feared that the spring and summer will pass away without any real improvement in either trade.

Several of the local railways have held their meetings during the week. The following dividends were declared for the half-year:—Taff Vale, 4½ per cent.; South Wales, 1½ per cent. The Taff Vale Company are applying to Parliament for powers to extend their line to the Dare Valley. This is opposed by the Vale of Neath Railway Company, who have already opened their line through the valley at an enormous expense. The traffic receipts of the Llanelly Railway and Dock Company for the past week show an increase of 13*l.* as compared with the corresponding week last year, and the South Wales Railway Company shows an increase of 26*l.*

The Electric and International Telegraph Company have just extended their wires from Neyland to Milford Haven. This will be a great convenience for shippers and others, especially in stormy weather, when so many vessels run into Milford for safety. Another slight explosion of gas took place on Monday morning at the Bargod Pit, the property of the Dowlais Iron Company. Two men were severely injured, but they are progressing favourably under the medical treatment afforded them. The cause of the explosion is not known.

THE EXPLOSION AT THE GETHIN COLLIERY.—Some few details were given in last week's Journal respecting this explosion, which has caused such a fearful destruction of human life. It appears that there were about 200 men and boys in the pit on the day of the explosion. The air was quite fresh in the morning, and there were no indications of gas in any part of the colliery. The usual current seemed to pass through the workings, and the fireman had reported everything all right. Furnace ventilation is adopted in the pit, and it need not be remarked that this is considered by the great majority of scientific men to be the safest and most sure method of securing a sufficient and continuous supply of air. Between 12 and 1 o'clock the explosion took place, in what is known as the Four-foot vein. The majority of the men were at or returning from their dinners at the time, which is proved by several of the unfortunate fellows having been found with bread and other victuals in their mouths and hands. This leads to the supposition that they must have had a practice amongst them of meeting together in groups here and there to take their meals. If such were the case, it ought not to have been permitted, for the practice of the men in leaving their working places and going about the works is universally condemned. The first intimation that the hithers and others near the shaft had of the explosion was that their lights went out suddenly. This led them to think at once that something had taken place, and their suspicions were soon confirmed by a number of the colliers making their way to the bottom of the shaft. For about two hours it was feared that all had perished except those who had managed to get to the shaft. Fortunately, however, it turned out otherwise, and a great number of the men found their way out; some through a drift, and others through the Gethin No. 2 pit, the workings of which communicate with No. 1, where the explosion occurred. Late in the evening about 50 were missing, and on Thursday it was ascertained that 47 souls were hurried into eternity, without hardly a moment's warning. The air, as may be expected, was exceedingly foul in many parts of the workings on Thursday, and very little could be done in reference to making an examination of the cause of the catastrophe. Mr. Thomas Evans, the Government Inspector of the district, arrived by the first train on Thursday morning, and he immediately proceeded down the pit and commenced his examination of the workings. He has since been actively engaged with the viewers of the locality in making a complete and minute inspection of the colliery.

The inquest was formally opened on Friday last, before Mr. Overton, coroner for the district, at the Bush Inn. The following gentlemen were sworn on the jury:—Thomas Stephens, Chandler, foreman; Peter Williams, Edwin Gay, John Davies, John Nicholas, Wm. Harris, David Jones, Thomas Loveridge, David Richards, John Davies, William Lewis, James Owen, Thomas Watkins, R. Evans, Wm. Gould, and Benjamin Ballard. The coroner, in opening the proceedings, said that after viewing the bodies of the unfortunate men who had been killed, he proposed to adjourn the inquest until Tuesday, March 4. The reason he suggested an adjournment for so long a time was in order that a full and deliberate enquiry should take place into the cause of the catastrophe. It would also enable Mr. Evans, the Government Inspector, to make a thorough examination of the workings. The adjournment was then agreed to. The coroner and jury afterwards proceeded to view the bodies.

Energetic efforts are being made to raise a fund for the relief of the widows and orphans. Mrs. Crawshaw has been most attentive in visiting the bereaved families, and they are not left in want of anything. It is said that Mr. Crawshaw will head the subscription list with the munificent sum of 1000*l.* Suggestions have been thrown out in several of the local journals, that as the Hartley Fund has reached about twice the amount required, part of it should be handed over for the relief of the sufferers by this calamity. The suggestion is a very reasonable one, and it is hoped that the Hartley committee will accede to it. The Bishop of Durham said that 17,000*l.* would be sufficient to meet all the wants of the bereaved at Hartley, but the subscription already amounted to about 50,000*l.*; 10,000*l.* of this would be a liberal contribution to the Merthyr sufferers, and it would make but a small gap in the Hartley Fund.

It would be unwise to speculate as to the cause of the explosion; whether it was negligence on the part of the men or masters, or whether it was caused by circumstances beyond human skill, is more than at present can be decided. It is to be hoped that a full investigation will take place, in order that some precautions may be taken against a recurrence of such fearful sacrifice of human life.

The representation of the *Staines Herald*, in describing the appearance of things immediately after the explosion, makes the following pertinent and truthful observations respecting the brave men who ventured down the pit in order to render all the assistance in their power to their fellow-workmen:—"In looking at the scene of Wednesday last, I could not help thinking how much the world is led by the glitter of names and of things. Talk of heroism on the field of battle, all very well, perhaps, in its way; but, for a higher heroism, commend me to these poor Welsh colliers, who, with no martial music to inspire them onward, no flatteringly held up as the reward of courage, quietly descend to the dark abyss below, to face dangers, at least, equal to those en-

countered on the field of battle, animated only by the hope of saving a comrade, a friend, perhaps merely a fellow-creature. These Welsh colliers truly deserve to be classed among the noblest of heroes."

The correspondence which appeared in the *Times* shows that a more than usual searching enquiry is needed, as Mr. Crawshaw affirms that no expense is spared in procuring the best professional talent for the management of his extensive works.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

FEB. 27.—The Iron Trade is about as last described. There are rather more orders for the United States, and a greater disposition to do business, but the want of confidence in the stability of the merchants at a crisis like that which their country is encountering keeps transactions within a narrow compass. A gentleman from New Orleans has been here during this week, and intimates that as soon as access to and from the southern parts of the States can be obtained large quantities of iron hoops will be wanted for packing cotton. When this desirable result shall be achieved, no doubt a turn in commercial affairs will be experienced. A good French order for various kinds of iron has been taken by one of the leading houses in South Staffordshire. The Hardware Trades of Birmingham, Wolverhampton, and South Staffordshire generally are a shade better than they were. The Coal Trade is quiet, but more active than the iron trade.

A fearful case of boiler bursting occurred in the Staffordshire potteries, at the Fenton Park Ironworks of Messrs. Lawton and Co., on Friday last. There are two blast furnaces and two steam-engines which create the blast, and are fed on steam from four boilers. On the Thursday one of these boilers was being cleaned out, and the three others were in use. James Buckley was in charge of the engines during Thursday night, and on Friday evening George Berks, whose duty it was to take to the engines for the day, reached the works a little before six. He found Buckley oiling the valves of one of the engines, and all appeared to be right. The overcooker, Samuel Kimberton, also went to the works a few minutes before six, and spoke to Buckley. Both, however, went away, Berks for a few minutes, intending to return and take to the boiler for the day. Directly after he left, however, a fearful explosion occurred. One of the boilers was driven about 50 yards, when it struck one of the blast furnaces, shattering it to ruins, while the boiler was doubled up and broken. Another was carried entire, with the exception of a slight rupture at the end, a distance of nearly 400 yards, and fell into a reservoir. A third was torn to pieces, the two principal parts going in opposite directions some 200 or 300 yards from the spot. The boiler out of use was lifted from its seat and removed to some distance. Of course the fragments of the brick work were scattered about like hail, and a woman rising from bed in alarm put her foot on a hot brick which had fallen through the roof. The groans of the unfortunate engine-tender, Buckley, were heard from amongst a heap of bricks, but before he could be extricated he was dead. Happily he was the only person who suffered any serious injury. It was estimated that the loss to the proprietors would be about 5000*l.* An inquest was held on Saturday, for the purpose of enquiring into the circumstances attending the death of Buckley, at which Mr. Wynne, Mines Inspector, was present. The evidence was to the effect that the boilers were sound and strong, but that they had evidently been allowed to become short of water, and it was supposed the feed had been turned in suddenly, and thus by the water pouring on the red-hot plates an immense amount of steam was suddenly generated. It appeared that the fault rested with the deceased only. A verdict of "Accidental Death" was returned. It rarely occurs that a number of boilers burst simultaneously, as these did.

Another fearful boiler explosion occurred at Messrs. Blackwell and Sparrow's, Corbys Hall Malleable Ironworks, about 2 miles from Dudley, which resulted in the death of four men and serious injuries to about ten others. The exploded boiler was about 30-horse power, and was heated by the flues of the puddling-furnaces. It was laid down in a spherical form, and its main use was the working of a powerful steam-hammer. At six o'clock a number of men were at work in the puddling-furnaces, when a fearful explosion took place. The roof of the furnaces was immediately broken through by a mass of falling debris, and the whole place presented a scene of wreck. The bodies of four men were speedily found in the debris, all of them being employed at the works. Ten or twelve others were found to be seriously injured, some of them so seriously that no hopes are entertained of their recovery. The cause of the explosion at present remains a mystery.

The extent of the liberality called forth by the terrible calamity at Hartley is remarkable. In a recent number of the *Birmingham Daily Post* the editor announces the receipt of subscriptions in Birmingham exceeding 500*l.* It is probable that the surplus will suffice to relieve the survivors of the unhappy sufferers at Merthyr.

Bellows cutting has been again practised within a few days at Dudley. The shop of a hosiery maker, named Benjamin Darby, was entered in the night, and four pairs of bellows destroyed by cutting. Two men have been remanded on the charge of having done this crime, and the evidence against them appears strong.

An attempt to obtain water at Rugby by means of an artesian well has failed, so far as any practically useful result is concerned. Mr. Hawksley, the well-known experienced engineer in connection with waterworks, has superintended the boring, which was conducted by the local board, with a view to provide a supply of water for the town.

At the Birmingham Banking Company meeting, a very gratifying announcement was made—that the leading partner of one of the principal manufacturing firms of the town having made good a loss which the bank sustained by him—not very long after its establishment, and the obligation to recognise which had long been legally cancelled, the directors were enabled, with a small balance from other sources, to make a division of 7*s.* 6*d.* per share on the original 10,000 shares of the company, to the present owners of which shares this fund solely belongs.

REPORT FROM YORKSHIRE, DERBYSHIRE, AND LANCASHIRE.

FEB. 27.—The position and prospects of the Iron Trade are exceedingly unsatisfactory, and great dullness prevails amongst all its branches, except those relating to the railway and shipbuilding departments. There is only a limited supply of orders on hand, which prevents many firms from making full time, and renders the condition of the operatives one of unusual depression. The traffic on the railways is decreasing to such an extent that it is sure to affect the position of the next half-yearly dividends. The Coal Trade is very dull, and at some of the collieries the men are only working three days per week. The demand for coal is excessively dull, and a reduction is being made in the wages of the men. This dullness is universal throughout the whole of the coal-producing district, and we see no reason for hoping for any improvement so long as the commerce of the country is paralysed by the unwise policy of the Federal States.

Several of the ironmasters and coalowners are preparing specimens of ironstone and coal for the forthcoming Exhibition. We believe that the county of Derby will be fairly represented in minerals. The quality of the iron made from Derbyshire clayband stone cannot be excelled. The county will supply the want that is now experienced in South Staffordshire of an abundant supply of good ironstone. The demand for good Derbyshire iron is rapidly increasing. The superior quality of the iron is evident, from the severe tests to which armour-plates have been subjected, made from Derbyshire iron. Messrs. Beale and Co., Parkgate Ironworks, Lotherham, and Messrs. John Brown and Co., Atlas Steel and Spring Works, Sheffield, are largely engaged in this manufacture from Derbyshire iron. The Clay Cross Company, Messrs. Whitehouse and Sons, and the Sheepbridge Iron Company, have each a pany, Messrs. Whitehouse and Sons, which is used for armour-plates, and other purposes requiring great tenacity. Mr. Barrow, of the Staveley Works, will show coals and ironstones from which the castings in the Exhibition building have been made. The Buttery Company will show materials from which they make iron, which is rolled into heavy masses for girders, &c. They have just rolled an immense plate, 34 ft. long, 7 ft. wide in the middle, and 2½ in. thick, for one side of a pumping-engine beam. New works are going to be erected at Whitlington, near Chesterfield, for the manufacture of steel. We have no doubt but in a few years the whole of the Derbyshire pig-iron will be manufactured in the county. The importance of good iron is becoming more evident daily, and our railway companies are more particular in stipulating for quality rather than low prices. We, therefore, hope that the Derbyshire ironmasters will make such a show at the Exhibition as will draw the attention of both English and continental consumers to the merits of the article, and thus enhance considerably the value of the mineral products of Derbyshire, which have slumbered already too long.

The depression which has characterised the iron and coal trades, as well as all other branches of English industry throughout the country, arising mainly with the unfortunate strife in America, has induced a number of the iron and coalmasters to reduce the price of labour 10 per cent. We are not aware whether this movement is contemplated by all the ironmasters, but it is pretty certain that if it is adopted in one district the reduction will become general. In Yorkshire and Lancashire several firms have followed this course. We learn also that Mr. Barrow, of Staveley, has formally given notice of his intention to reduce all the workmen in his employ 10 per cent., a portion of which notices expired during last and this present week. We learn that the moulders, fitters, and engine-drivers in his employ have refused to accept the reduction, and have been out on strike since Monday. A deputation from this department of his workmen, armed with a numerously-signed requisition from themselves, waited upon Mr. Barrow, and offered to resume work at a reduction of 5 per cent., but that gentleman declined to accede to their request. The notices to the men employed in the collieries and ironstone mines do not expire until Saturday, March 1, and so far as we have been able to learn, no organised expression of their views has been made, and, therefore, we are in ignorance of what course they will adopt with regard to the dispute. The matter is one of the highest importance, not only to the men themselves, but to the whole of the trading classes of this district, and every step which may be taken in reference to it requires more than ordinary judgment and precaution. Ill-advised conduct might lead to the infliction of much misery and loss, but if the workmen adopt a right course they may lessen the evil of many of the difficulties. The past history of disputes between masters and workmen has abundantly shown that the suspension of labour, in order to enforce a capitalist to agree to certain terms, has been a suicidal course. We would strongly urge upon the workmen the necessity of avoiding a strike, and all its consequent evils, and we do strongly recommend the adoption of a conciliatory course as the safest method of redressing their grievances. Unfortunately, the social elevation of the working colliers has been sadly neglected by those upon whom has rested the responsibility of attending to his mental culture, and few there are amongst this numerous and hard-working class who have had the foresight, thought, and prudence to prepare for a period of adversity and depression; they are, consequently, unable to fight the battle of labour against capital, and are, therefore, at the mercy of those by whom they are employed. Much has been done, we must admit, to provide for their religious welfare by the large employers of labour, but until the mind of the working man is more elevated in the social scale it is impossible that he can receive those great religious convictions with that truthfulness and sincerity which is essential to fix them impressively upon his mind. We shall never hesitate to advocate the interests of the working classes, nor to use our best efforts to crush oppression in whatever form it may appear.

On Tuesday last a fire took place in the North Gower Colliery, in a very singular manner. A workman was dressing a brick with a trowel when a spark set fire to the gas, and in a short time afterwards the whole of the district was illuminated.

The local share markets have been duller this week than usual, and scarcely any business has been done in mining stocks.

The directors of the North Derbyshire Mining Company have determined to suspend

all further operations at the mine until the whole of the arrears of call are paid, the shares of the defaulters are forfeited. Notice has been furnished to those in arrears, and should they not pay forthwith proceedings will be commenced against them.

The Mill Dam Company are flooded out by their neighbours, the Great Northern Coal Company, between whom a lawsuit is now pending. The latter company have the flow of water in the swallow which has produced this effect.

The object of the suit, London and North-Western Railway Company v. Ackroyd, heard in Vice-Chancellor Wood's Court, on Wednesday, was to restrain the defendants from working for coal under the Morley tunnel between Leeds and Huddersfield, so as to affect the adjacent and subjacent surface which the plaintiffs claimed to be entitled. In 1858 Lord Dartmouth granted a lease of the coal and minerals lying under the land conveyed to the railway company to the defendants, Messrs. Ackroyd, who had served the plaintiffs with notice of their intention to commence working under and adjoining to the tunnel, unless the company would give compensation. The plaintiffs replied by a notice requiring the company to leave sufficient support for the tunnel and shafts, and holding them responsible for any damage or risk occasioned to the public safety. They had subsequently filed a bill to establish their right to subjacent and adjacent support without being bound to compensate the defendants, and to restrain any working so as to interfere with support. The Vice-Chancellor was of opinion that the defendants were entitled to be compensated, and, therefore, that the case of the plaintiffs had failed.

THE DURATION OF THE NORTHERN COAL FIELD.

It will be remembered that at the annual meeting of the North of England Institute of Mining Engineers, at Birmingham, Mr. Hall, of Newcastle, read a very interesting paper "On the Rivers, Ports, and Harbours of the Great Northern Coal Field." We gave a copious summary of the paper at the time, and expressed our appreciation of its value. In the interval that elapsed between the reading of the paper and its passing through the press, Mr. Hall, with the consent of the council of the Institute, has made two or three valuable additions, and, amongst other things, he has revised his estimate of the duration of the Northern coal field by the method which, since he first wrote on the subject, have been collected respecting the extraction of coal. The paper has only just been issued, and we scarcely had time to examine it thoroughly; but the portion relating to the duration of the coal in Northumberland and Durham, upon which we light on opening the *brochure*, is very interesting and very valuable.

The writer states that the total area of the coal measures in the Northern coal field is 800 square miles, which he estimates would originally contain 8,200,000,000 tons of coals. Of this quantity 2,600,000,000 tons, or about, was in the county of Northumberland, and about 5,600,000,000 tons in the county of Durham.

From this deduct the quantity estimated by the writer to have been exhausted between the year 1854—3,060,916,801 tons from the two counties—and the quantity remaining in 1854 and 1860 at the rate of 17,000,000 tons annually (85,000,000 tons), and find a total quantity remaining of 5,026,983,987 tons. Divide this amount by the present yearly production, 22,500,000 tons, and the result is 223 as the number of years the field will last at the present rate of working. Some fifteen years ago, Mr. Green, in estimating the duration of the Northern coal field, observed that if the present rate of extraction continued, the coal beds would last for 331 years. The writer of this paper, in 1854, showed that the annual yield was 14,000,000 tons, and estimated the duration at 365 years, but predicted that in a very short time, the rate of extraction would be raised per year, in which case the field would be exhausted in 223 years. At the present date even this quantity has been exceeded by 2,500,000 tons per year, and the duration of the Northern coal seams is, therefore, as shown in the present statement, reduced to 223 years.

The 22,500,000 tons raised in this district are, in the writer's estimate, distributed in the following proportions:—

Shipments overseas and coastwise	Tons 10,583,118
Led and consumed by vessels on the rivers Tyne and Wear } say for local trade	1,115,000—11,698,118
Consumed in iron furnaces	2,600,000
Factory and household consumption (local)	4,800,000
Colliery consumption and waste underground, about	4,000,000—10,000,000

Annual extraction from the Northern coal field

"Now, as has been already noticed, the overseas exportation from the Great Northern coal field is rapidly increasing, so that in a short period we may expect to see 10,000,000 tons per annum in excess of the present quantity. The blowing-in of dormant furnaces in this district would, most probably, create a demand for as much as 2,000,000 tons; and it is not improbable that the local manufacturers may be increasing their consumption, and that 2,000,000 tons per annum extra may shortly be added to their account. This would raise the extraction to 28,500,000 tons yearly, thus lessening the duration of the coal field to 177 years. This may be thought by persons to be an exaggerated estimate of the future progress of coal production, but look back only six or seven years, and we see precisely the same augmentation taking place, and with all the appliances and transit facilities that have been brought into play in the last thirty years, who shall venture to place a limit upon our power of production as long as coal remains to be won, and its use is as indispensable as it is at the present time?"

In connection with this subject Mr. Hall mentions a circumstance which so far as we are aware, has never been noticed before—the practice which prevails rather extensively in the trade of giving overweight:—

"The Newcastle chaldron is 53 cwts., but many collieries give 55 cwts., and the chaldron, which surplus does not enter into the returns of the total production of a large quantity this overweight becomes a considerable item, and renders the estimate of coal—past and future—greater than it would otherwise appear to be. The practice continues, it may happen that the total duration of the coal field may be looked back only six or seven years, and we see precisely the same augmentation taking place, and with all the appliances and transit facilities that have been brought into play in the last thirty years, who shall venture to place a limit upon our power of production as long as coal remains to be won, and its use is as indispensable as it is at the present time?"

This last is rather an important question, and will, no doubt, form a subject of investigation by Mr. Hunt in his next volume of *Mineral Statistics*. It is quite certain that under such a system a great deal of coal is exported of which no account is taken, and it is of much importance to ascertain to what extent the practice prevails, and whether the Northern coalowners are singular in this respect.

FOREIGN MINING AND METALLURGY.

M. Petitgand, a French mining engineer, has just published some valuable details with respect to mineral and metallurgical industry in Spain. M. Petitgand considers that the south of Spain may be divided into three great mineralogical districts, in all of which the working and treatment of lead predominates—especially on the shores of the Mediterranean, from Adra to Almeria. The first district is that comprised between the Sierra Morena and the Valley of the Guadalquivir, and it is distinguished by the other localities by its extreme richness in copper bearings. A group is met with in the north of the province of Cordova, in the mountains of the Sierra Morena, near the sources of the Rio Jandula, and the affluents of the great river of Andalusia. Ancient scorias, which cumber the valley of Alcudia, testify to the activity with which the mines were worked in remote antiquity, or while the Moors were masters in the country. But it is in the province of Huelva that copper mines have their greatest development, and there they cover almost the whole country, and even to beyond the frontiers of Portugal. It is not a group, but a region of mines. Notwithstanding, however, the lavish profusion of the nature, all the bearings remained unworked up to 1850, with the exception of the mines of Rio Tinto, which have been worked by the Spaniards since 1782. Several companies have since attacked the district with more success. We may mention, for instance, the workings of San Juan de Assoyo, Molinos, Poyatos, Calanas, &c., in the valley of the Odiel, and Portugal Vista-Falsa, Santo Domingo, &c. The standard of the Rio Tinto is not very high, but the power and extent of the veins are such that the annual extraction of 300,000 to 400,000 tons may be easily effected by means of railways as established in this part of Spain, and exports are not impeded. Already the minerals, which are highly charged with sulphur, are shipped in large quantities to Wales, from 120,000 to 150,000 tons being exported annually to Swansea. A portion of the minerals raised are consumed on the spot, and notwithstanding the high price of combustible, the consequence of difficulties of transport, smelting has been carried on with success, 25 to 30 per cent. of metal being obtained. If the idea of long since of introducing the smelting of copper ores into France, or the basin of the Mediterranean is actually realised, and strong hopes are entertained on the subject, the mines of Huelva would readily form a portion of the supplies required by such an enterprise. To the east of Andalusia the lead mines of Linares and Caroline are being worked with vigour, though when in the hands of the Spanish Government only a feeble amount of production obtained; the deliveries, which were insignificant ten years since, now exceed 20,000 tons annually. Espiel and Belmes, in the Sierra Morena, hold in reserve coals which the basin of Villaverde del Rio delivers to the forges of Pedrosa, to the north of Seville, and are situated in the neighbourhood of abundant ferruginous deposits. The Cordova and Seville Railway derives from this district the fuel required for its locomotive service, and distributes the combustible to the districts which it traverses. But this is not all. Certain branches projected in connection with the same railway will enable arguments to lead mines in Estramadura to obtain one day the combustible which they require in order to place their products on this vast centre of enterprise. The basin of the Guadalquivir comprises abundant mineral resources, which will assure it a leading position, unless, indeed, agriculture, stimulated by the admirable fertility of the soil and the abundance of the population, does not predominate. But its copper mines will

the district an important place in connection with metallurgical and mining enterprise.

The Don Coal Mining Company (Société Houillère de Don), in the district which it has undertaken at Wiers, has just struck a third bed—in which it has previously reported—from 20 in. to 26 in. thick, only about 2 ft. 6 in. from the last. These three beds, lying closely together, will, it is believed, lead to an important extraction of coal in a short time, and at comparatively small expense.

Three disastrous explosions of fire-damp in Belgium—one in the pit of Belle-Vue d'Amerscoul, in the Jumet district; the second, in pit 7 of the collieries of Escoffiaux, at Wasmès; and the third, in pit 7 of the collieries of Crachet-Piquery, at Frameries—have had the effect of directing much attention to the ventilation of mines; and some observations instituted by M. Delsaut, a Belgian mining engineer, have proved that deleterious gas is evolved in a greater degree in proportion as the pressure of the atmosphere falls, and that it diminishes when this pressure becomes stronger. A reduction of the atmospheric pressure is observed specially at the commencement of spring; and the annexed official statistics extending over the 30 years comprised between 1830 and 1850, show the months attended with the greatest loss of life are March, April, May, while the least disastrous months are September and October, and an inverse effect is produced:—

Months.	Accidents.	Wounded.	Killed.	Total victims.
January	12	34	15	49
February	11	39	13	52
March	23	108	164	272
April	28	86	151	237
May	28	84	129	213
June	20	56	125	181
July	19	86	26	112
August	20	80	95	175
September	14	48	13	61
October	6	22	—	22
November	17	78	49	127
December	18	67	56	123
Total	216	788	836	1624

of every 100 accidents and persons injured, the various seasons constituted the following proportions:—

Seasons.	Accidents.	Wounded.	Killed.	Total victims.
Spring	36-57	35-28	53-11	44-46
Summer	27-32	28-17	29-42	28-82
Autumn	17-13	18-78	7-43	12-93
Winter	18-98	17-77	10-14	13-79
Total	100-00	100-00	100-00	100-00

conclusion is to be drawn from these figures is, that the pressure of the sphere should be supported when it has a tendency to fall by the injection of compressed air. As to the question whether miners could not be surcharged with a mine ventilated by compressed air, appears to have been solved by the test of experience. By the employment of compressed air in mines, miners, it is contended, would breathe freely, and would absorb, in the same time, a greater quantity of oxygen—one result which would, probably, be observed, being a diminution of number of anemic and asthmatic complaints. Again, in consequence of a greater quantity of air being introduced into the same space, the consumption of lamps would be more perfect, and the light more lively, while there would be less of the noxious smoke which now incommodates miners.

It appears that last year thirteen new concessions of mines of combustible minerals, extending over 7744 acres, were granted in France; five concessions of mines of ironstone, extending over 1624 acres; one of bituminous schist, extending over 1620 acres; nine of copper, lead, silver, and other metals, extending over 9568 acres; and one of iron pyrites, extending over 348 acres—making a total of 29 concessions, extending over a total surface of 20,904 acres. Besides these, 96 applications for concessions were to be disposed of on Dec. 31 last, of which about 30 referred to mines of mineral combustible.

GOLD DISCOVERIES IN NOVA SCOTIA.—The interest attaching to auriferous deposits in Nova Scotia has for some time past been gradually increasing, and it is gratifying to learn that means are now being taken which we may hope that the date of their complete and systematic development is not distant. Although so long since as 1855 Dr. Dawson tested the probability of the quartz veins on the Atlantic shore proved to be auriferous, the first actual discovery of the precious metal was in 1860, near the head-waters of the Tangier; and even here the amount of gold obtained was so small, and the distance of roads and navigation so considerable, that the excitement caused by the discovery subsided. In March, 1861, however, the existence of gold amongst pebbles in a brook about a mile eastward of the mouth of the Tantriver, was accidentally discovered, and the results obtained with the implements were so encouraging, that general attention was at once directed to the subject, and the explorations since made have been attended with the best results. Mr. Campbell, an amateur geologist of the province, arrived upon the sands accumulated on the sea shore, and with such success, that a rush from the upland workings was caused, and the daily output was shortly raised to 100 ozs. Further explorations led to the discovery at Dartmouth, Lawrencetown, and Sheet Harbour, and these were followed by others at Wine Harbour, Isaac's Harbour, and Sherbrooke. The prospects of certain properties at this latter place has been favourably reported upon by Mr. JOHN ARTHUR PHILLIPS (of Messrs. Phillips and Darlington), who has carefully inspected it, that the LONDON NOVA SCOTIAN GOLD MINING AND QUARTZ CRUSHING COMPANY decided upon working it in the most efficient manner. With this view Mr. Phillips and Darlington were requested to prepare the working drawings (which we have taken the opportunity of inspecting during the week), for the necessary crushing and amalgamating machinery, and in this month the whole of the castings, &c., will be sent out to Sherbrooke, and erected upon the company's property without delay. The arrangement of the whole apparatus is extremely neat and compact, and apparently combines power, efficiency, and great economy in the treatment of quartz. The machinery consists of a heavy-headed stamping-mill, iron lifters, &c., driven by steam power, and furnished with three disintegrators, through each of which the crushed ores must pass in succession before they can escape in the form of tailings. Perhaps the most attractive feature in the machinery which Messrs. Phillips and Darlington have designed is, that it is simply a combination of those contrivances which have been found to be the most perfect—the Cornish stamps are by steam-power to reduce the quartz to powder, and amalgamators are the most simple and proved-to-be-efficient character to separate the gold from the refuse, and we do not hesitate to state we have far greater confidence in the results obtainable from such mechanical appliances as this in the so-called new processes to succeed in the remunerative development of which the inventors would have to procure so important amendments in the laws of chemistry and, indeed, of Nature generally, by which must at present consider ourselves bound to be guided.

IMPROVEMENTS IN SMELTING.—In the Journal of March 30, 1861, we described an improved process of introducing the fuel into blast-furnaces, patented by Mr. John Broad, of Handsworth, whereby great economy is effected. In January one of the improved apparatus was erected at the Park End Works, in the Forest of Dean, Gloucestershire, and is doing its admirably. From the results obtained at the Park End Works, it is estimated that by its general use many thousands of tons of the small fuel would be utilised, and made nearly as valuable in the blast-furnace as the large coke and raw coal. If the success attained elsewhere at the Park End Works, the value of the invention cannot fail to be appreciated by every pig-iron maker in the kingdom.

MALLEABLE CAST-IRON.—Malleable cast-iron is cast-iron which has been subjected to a roasting and oxidising process without being fused, by which it becomes soft and tough. The improvement in the treatment of iron to render it malleable was made by Samuel Lucas, of Sheffield, who obtained a patent in 1804, and his process is the one which is in general use at the present day. The articles of cast-iron to be malleable are placed in a suitable furnace, and pulverised with between them to prevent them from adhering; they are then covered with a pulverised oxide of iron, and subjected constantly to a high but not fusing heat for six days and nights; then allowed to cool very slowly. The theory of the process is that the oxygen of the pulverised iron ore in the furnace, and passes off as carbonic acid, leaving the iron soft and malleable, without changing its form. This was one of the earliest discoveries ever made in metallurgy. It is now extensively practised as an art in every civilised country. Cast-iron nails can be rendered so malleable and tough by this treatment that they may be clinched almost as easily as made of wrought-iron. In 1838 Charles Bury obtained a patent for treating raw iron with a mixture of the oxide of manganese and charcoal in powder in a furnace, by which the malleable iron. The pigs were laid in alternate layers in a furnace with the mixture of manganese and charcoal between them; then they were kept for two or three days, and subsequently left to cool in the furnace for three

days. The second process is a mere modification of the first. Cast-iron articles, without being melted or having their form altered, are thus rendered malleable. Wrought-iron, except when mixed with carbonaceous matter, is incapable of being melted and cast, but by mixing it with three times its weight of pig-iron it will fuse under a strong heat, and may be cast and annealed. Castings possessing the same properties as those of malleable iron may thus be obtained, but unless made of cheap scrap iron they would cost more than castings entirely of pig-iron malleable.—*The Engineer.*

THE COAL MINES OF THE UNITED STATES.

There are in North America five principal coal areas, compared with which the richest deposits of other countries are comparatively insignificant. These are the great central coal fields of the Alleghenies; the coal fields of Illinois, and the basin of the Ohio; that of the basin of the Missouri, and those of Nova Scotia, New Brunswick, Cape Breton, and the Monte Diablo district of California, an area of 50 miles square. Besides these there are many smaller coal areas, which, in other countries, might well take rank as a vast national importance, and which even in North America will one day contribute greatly to the riches of the various States.

The Allegheny or Appalachian coal field measures 750 miles in length, with a mean breadth of 85 miles, and traverses eight of the principal States of the American Union. Its whole area is estimated at not less than 65,000 square miles, or upwards of 400,000 square acres.

The coal is bituminous and used for gas. In Kentucky both bituminous and Cannel coal are worked in seams 3 or 4 feet deep, the Cannel being sometimes associated with the bituminous coal as a portion of the seam, and there are in addition valuable bands of iron ore. In Western Virginia there are several coal fields of variable thickness, one 9½ feet, two others of 5 feet, and others 3 or 4 feet. On the whole, there seems to be at least 40 feet of coal distributed in 13 seams. In the Ohio district the whole coal field affords on an average at least 6 feet of coal. The Maryland district is less extensive, but is remarkable as containing the best and most useful coal, which is worked now to some extent at Frostburg. There appears to be about 30 ft. of good coal in four seams, besides many others of less importance. The quality is intermediate between bituminous and anthracite, and considered well adapted for iron making. Lastly, in Pennsylvania there are generally from two to five workable beds, yielding on an average 10 feet of workable coal, and amongst them is one bed traceable for no less than 450 miles, consisting of bituminous coal, its thickness being from 12 to 14 ft. on the south-eastern border, but gradually diminishing to 5 or 6 ft. Besides the bituminous coal, there are in Pennsylvania the largest anthracite deposits in the States, occupying as much as 250,000 acres, and divided into three principal districts.

The Illinois coal field, in the plane of the Mississippi, is only second in importance to the vast area already described. There are four principal divisions traceable, of which the first, or Indian, contains several seams of bituminous coal, distributed over an area of nearly 8000 square miles. It is of excellent quality for many purposes, one kind burning with much light and very freely, approaching Cannel coal in some of its properties; other kinds consist of caking or splint coal. In addition to the Indian coal field, there appears to be as much as 48,000 square miles of coal area in other divisions of the Illinois district, although these are less known and not at present much worked: 30,000 are in the State of Illinois, which supplies coal of excellent quality, and with great facility. The coal is generally bituminous.

The third coal area of the United States is that of the Missouri, which is little known at present, although certainly of great importance.

British America contains coal in the provinces of New Brunswick and Nova Scotia. The former presents three coal fields, occupying in all no less than 5000 square miles; but the latter is far larger, and exhibits several very distinct localities where the coal abounds. The New Brunswick coal measures include not only shales and sandstones, as is usual with such deposits, but bands of lignite impregnated with various copper ore, and coated by green carbonate of copper. The coal is generally in thin seams lying horizontally; it is chiefly, or entirely, bituminous.

In Nova Scotia there are three coal regions, of which the Northern presents a total thickness of no less than 14,570 feet of measures, having 70 seams, whose aggregate magnitude is 44 feet, the thickest beds being less than 4 ft. The Pictou, or central district, has a thickness of 7590 feet of strata, but the coal is far more abundant, one seam measuring nearly 30 ft.; and part of the coal being of excellent quality, and adapted for steam purposes. The southern area is of less importance. Besides the Nova Scotia coal fields, there are three others at Cape Breton, yielding different kinds of coal, of which one, the Sydney coal, is admirably adapted for domestic purposes. There are here 14 seams above 3 feet thick, one being 11 feet, and one being 9 feet.

STEAM-ENGINES, AIR-ENGINES, AND PUMPS.—An invention was provisionally specified, but happily not proceeded with by Mr. A. W. Harnett, of the Irish bar, barrister-at-law, according to which it was proposed that the inner surface of the cylinder and the outer surface of the piston and piston-rod should all or either be so formed by any mode of rifling as to cause to be imparted to the piston a spiral movement when in motion.

INJECTION APPARATUS AND EYE DOUCHE.—Mr. Nye, the instrument manufacturer, of Mount-street, Lambeth, has patented an improved injection apparatus and eye douche. The specification, filed by Mr. Henry, patent agent, Fleet-street, describes two arrangements. In one a compressible vulcanised India-rubber vessel, fitted with air-valve, is fixed at the top of a fluid reservoir, with which it communicates, so that by alternately compressing and releasing the vessel the liquid is forced from the reservoir in a continuous stream. In the second arrangement an air-chamber is used, in which a valve is so fitted in the eduction way that it may be removed, and the vessel cleaned when required. In eye douche apparatus the cup, instead of being on a flexible tube, is attached to a rigid pipe, secured to the reservoir in proper position for use, thereby relieving the patient from the trouble of holding the pipe to the eye by hand.

PRESERVING TIMBER.—Mr. Thos. Cobley, Meerholts, proposes to preserve wood and render it inflammable, by impregnating it with a solution of the salts of barytes, strontia, potash, lime, magnesia, or their salts, or the salts of any base capable of forming with hydrofluosilicic or silicic acid. After the impregnation, which may be effected by any known means, the wood is further acted upon by treatment with similar acids.

PRESERVING WOOD AND IRON.—An invention of some importance to miners as well as railway proprietors has recently been patented by Mr. John Cullen, of the North London Railway, Bow, and presents a cheap and economic means of preserving wood from decay. The inventor proposes to use a composition consisting of coal-tar, lime, and charcoal. The charcoal is reduced to a fine powder, and such is the case also in regard to the quicklime. These materials are to be well mixed together and subjected to heat. In order to preserve wood, the composition is heated, and the wood is immersed therein. The impregnation of the wood with the composition may be materially aided by means of exhaustion and pressure, as has heretofore been practised when impregnating wood with other fluids. Wood thus prepared, in addition to being preserved from decay, will be found to resist the ravages of the white ant. When coating iron to preserve it from rust, the composition is heated for a time to a somewhat higher temperature than is found necessary for wood. In practice, Mr. Cullen finds it most advantageous thus to conduct the process: he takes coal-tar and adds to it one-third of its weight of quicklime, previously ground to a fine powder; when these materials have been thoroughly mixed by stirring, a quantity of finely-powdered charcoal, equal in weight to the quicklime employed, is also added, and the stirring is continued until the mixture is complete. In order to preserve timber, the composition above described is applied to the wood by any of the processes ordinarily employed in preserving wood when other liquid compositions are employed for the purpose. He prefers, however, that process in which the pores of the wood are first exhausted of moisture and sap, and the liquid afterwards forced into the pores. Before employing the composition for this purpose, he raises it nearly to a boiling temperature, but avoids keeping it for any length of time at this heat, so as to evaporate as little as possible of the more volatile constituents of the coal-tar. When the composition is to be applied to iron, it is first boiled for three or four hours, on purpose to evaporate the more volatile constituents, so that it may afterwards set the harder, and the iron is coated with the boiling composition, by preference when practicable, by immersing the ironwork in the composition, or otherwise by applying the composition with a brush.

COOKING SLACK.—An invention, which consists in making coke form either coal or slack of any description, by preference selecting the non-bituminous kinds as they are termed, such, for instance, as the Staffordshire thick coal, the "new mine," and other similar qualities, has been provisionally specified by Mr. F. A. Millward, of Wednesbury. He takes the coal or slack to be converted and, if necessary, reduces it to fine powder, which powder is then charged into retorts, the retorts being then closed and made as nearly as possible air-tight. In this state they are removed to ovens of any suitable size and construction, or they may be placed in the funnel-heads or flues of any furnace, by either of which means they are to be roasted for a length of time varying with the quantity and quality of the charge. By this process the waste heat and gases from blast and other furnaces is rendered available for the manufacture of coke.

ADULTERATION OF PARAFFIN OIL, &c.—At the Royal Scottish Society of Arts, Mr. A. Bryson read a paper on "The recent frequent Accidents from the use of Hydro-carbon Liquids." He stated that the accidents which occurred from the explosion of paraffin and similar oils used for illuminating purposes were nearly all caused through the inflammability of the original oils being increased by large additions of such combustible liquids as naphtha, petroleum, &c. This mixture not only enhanced the inflammability of the oil, but produced the exhalation from the liquid of a very explosive vapour, which immediately set fire to the oil on a light being applied. Mr. Bryson condemned the practice adopted by some unscrupulous traders of thus mixing paraffin oil with naphtha and petroleum, and selling it as pure and unadulterated. He illustrated his paper with experiments with paraffin oil of different quality, showing the explosive properties of the mixed oil, and the comparatively incombustible qualities of oil purely prepared.

MINE ACCIDENTS.—At South Caradon Mine, Jane Husband, aged 17, dresser, got her dress caught in the coupling of the jigg-machine, and was crushed to death. At Great Wheel Fortune, Samuel Rodda, 19, fell from the ladder-way, and was killed on the spot.

MINING IN AUSTRALASIA—THE GOOD HOPE MINE.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—What a land of mineral wealth is Australia! I observe from the report in the Mining Journal of Saturday last that the lode in this property has been cut solid and well defined at the depth of 30 fathoms, there yielding 5 tons of 10 per cent. ore per cubic fathom, but that the width of the lode has not been ascertained, as it had not been cut through; this, indeed, promises well. The lode above and just below the surface was of great size; and there, and for a very few fathoms down, yielded an abundance of ore of very large percentage, when the ground was found very much disordered; the lode twisted in all directions, even lying horizontally, and it was ultimately nearly lost sight of altogether. To have cut it, therefore, after a year's hard work, at a depth of 30 fathoms, compact and well defined, and producing ore, must be regarded as a fortunate and promising result. Captain Dalley examined and reported on this property in 1853; and in this case, as in various others that have occurred, his views would appear to be pretty nearly right. His report is as follows:—

"This property consists of about 400 acres, and is situated near the town of Yaas, on the river of that name, in New South Wales. It is bounded on one side by the river, and on the other by a creek, which at the time I was there contained water amply sufficient for dressing ore. Upon the surface of this property there exists a strong large lode, varying from 3 to 12 ft. wide, and in some places rising 25 feet above the level of the ground. Across this lode, which (with one exception of 120 feet between points opened) exists above the surface for upwards of 480 yards, I caused to be cut four or five trenches, from which I excavated a ton or two of good ore. The ore is red oxide, mixed with native copper, and green and blue carbonate, with ore admixture of any other inferior qualities of ore; and this, as you will be aware, will yield a very high percentage of copper. There is a large quantity of this ore lying on the surface, which has rolled down from the elevated parts of the lode; and from these, and what may be broken off the lode itself at the surface, it appeared to me that some hundreds of tons of ore might easily be collected on its extent of 480 yards. At both extremities of this line the lode continued, but to what extent I cannot state, as I made no search beyond what I have stated.

"Practically to deal with this property, I should recommend a small steam-engine for crushing the ore, which should be erected on the bank of the Yaas River, and thus water would be obtained not only for the engine, but it might be made to supply every requirement, by the use of pumps, for dressing the ore when the water in the creek might fail. Furnaces also would, of course, require to be erected for smelting the ore, on account of the distance from Sydney, the nearest shipping port. In the early progress of copper smelting in South Australia great difficulty was experienced in smelting ore without coal, but lately this has been overcome, and within the last three years, as is well known, as much as 500 tons of ore per month has been smelted at the Kapunda Mine, in South Australia, by the use of wood alone. I am glad, therefore, to be able to say that the Good Hope property is well wooded, and situated in the midst of immense forests, belonging to the Government, from whom a license may be obtained on payment of small fees for cutting any amount of wood that may be required, and there is no likelihood whatever that there will ever be any want of fuel in this district. Although practically acquainted with mining for nearly forty years in different parts of the world, I have never seen anything so good at surface as this remarkable lode. It is, however, situated in a new district, where no mines have been opened on, and where there is, therefore, no parallel case and no grounds of comparison from which to judge whether it will extend to a great depth or great extension or otherwise; and as regards the operations that may be carried on upon it, I should certainly recommend great caution in the manner of laying out of the mine, by keeping steadily in view the peculiarity I have pointed out as inseparably connected with it, as well as the general uncertainty that attends all operations of the kind, even in districts where mining is common."

Captain Dalley, as you know, has been very actively engaged in practical mining for half a century in Cornwall, America, the Brazil, and Australia, &c. It was he who discovered the famous lode in the St. John del Rey. He is working now Wheal Polmar, in Cornwall, which promises to be so good a mine; fortunately for himself, I believe, owning a fourth part of it. His opinion, therefore, is likely to be worth something, especially as I am persuaded that neither money nor mortal living would induce him to say what he did not consider to be thoroughly true and right. You will say, perhaps, that it is a good testimony; be it so, it is deserved. A SHAREHOLDER.

GOLD EN ROUTE FROM AUSTRALIA.—There are now eleven ships due in England from Australia, with gold on board to the amount of about a million and a quarter sterling. The following are the names of the vessels, and the amount of specie on board:—The Indemnity, for London, out 108 days, with 12,447 ounces, of the value of 49,780l.; the Monarch, for London, out 108 days, 42,581 ozs., value 70,834l.; the clipper ship Lightning, out 99 days, for Liverpool, 24,040 ozs., valued at 91,160l.; the Clutha, for London, out 101 days, 22,662 ozs., value 90,160l.; Koorla Moorla, for London from Geelong, out 94 days, 11,994 ozs., valued at 47,866l.; the Scottish Chief, for Liverpool, out 92 days, with 4438 ozs., valued at 17,752l.; Netherby, for London, out 87 days, with 5460 ozs., value 21,840l.; the Queen of Nations, for London, out 86 days, with 33,212 ozs., valued at 132,848l.; the Southampton, for London, out 87 days, 49,679 ozs., value 177,676l.; the Marian Moore, for London, out 75 days, 8287 ozs., valued at 32,988l.; and the Result, for London, out 72 days, 39,403 ozs., valued at 161,612l. From the returns of the amount of gold shipped from Australia we learn that the total shipments were 1,847,713 ounces of gold, valued at 7,390,852l.

SALE OF MINE SHARES BY PUBLIC AUCTION.—Mr. T. P. Thomas sold by public auction, at Garraway's Coffee-house, on Thursday, the following shares:—20 Kelly Bray, 6s.; 10 ditto, 6s. 6d.; 50 St. Day United, 10s.; 20 South Caradon Wheel Hooper, 14s. 6d.; 36 ditto, 15s.; 25 Wheel Charlotte, 14s.; 5 Fowey Consols, 21s.; 6 ditto, 18s. 4d.; 8 South Herodsfoot, 3s.; 10 East Providence, 3s.; 1 Rosewarne United, 16l.; 1 Brynford Hall, 21s. 7d.; 6 Wheel Harriet, 17s.; 5 Bottle Hill, 5s.; 5 Rosewall Hill and Ransom United, 31s. 8d.; 3 Wheel Morris, 31s.; 1 South Bassett, 11l. 12s. 6d.; 1 ditto, 11l. 10s.; 10 Tolvaaden, 29s. 6d.

TO SPELTER MANUFACTURERS.—The Directors of the GENERAL MINING COMPANY FOR IRELAND (LIMITED) APPEAL ALL ZINC SMELTERS that they are now in a POSITION TO FURNISH IN QUANTITY REGULAR SUPPLIES OF CALAMINE, containing a high percentage of metal. The great deposit of calamine on the property of the company is the only one of magnitude known in the United Kingdom, but it is precisely similar in character to those in Belgium and Prussia. The ore is carefully dressed by the most approved machinery, and will be sold either by weight or by value, at the option of the purchaser. The quality of the spelter made from this ore is of the first-class, and is very superior to that manufactured from blende. By order, EDWARD MORAN, Sec.

TO METALLURGICAL CHEMISTS.—A GENTLEMAN, about to organise an undertaking for the reduction of silver ores in very large quantities, is OPEN TO RECEIVE PROPOSITIONS FROM PARTIES ABLE TO SUBMIT FOR CONSIDERATION PROFITABLE PROCESSES FOR THE SEPARATION, by chemical means, of SILVER FROM LIMESTONE BASES ON A LARGE SCALE.—Address, "S. O.," care of Messrs. Druce and Sons, Billiter-square, E.C.

TO PROPRIETORS OF SLATE QUARRIES, MINING COMPANIES, CONTRACTORS, AND OTHERS.—A middle-aged man, bred to the mining business, but who has retired therefrom, is DESIROUS OF SUPERINTENDING ANY WORKS, or as CAMBIER. Can give good reference, and security for several thousands. Salary not an object, his motive being merely to have his time occupied.—Address, "A. B. C.," Box 206, Post-office, Bristol.

TO BRASS AND YELLOW METAL MANUFACTURERS.—The ADVERTISER, who has had seven years' practical experience, and 15 years as assistant manager at the Harford and Bristol Brass Company's Works, is DESIROUS of a RE-ENGAGEMENT in the above trade.—Address, E. N. MORTIMER, BRASSWORKS, Keynham, Bristol.

IRON RAILS (NEW).—FOR SALE, about ONE HUNDRED TONS of RAILS, length 21 ft., weight 69 lbs. per yard. The above were originally made for the Scinde Railway Company, and being now in perfect order are worthy of attention, as they will be sold cheap. Lying in the West India Docks, at the Wood Wharf.—Apply to STEPHENSON and JACKSON, ship and insurance brokers, 3, Eastcheap, London, E.C.

THE HENDRE DDU SLATE AND SLAB QUARRY COMPANY (LIMITED).—Notice is hereby given, that the Directors of the company have made a CALL of THREE POUNDS PER SHARE on the shares of this company, PAYABLE on or before the 24th day of June next, at the London and County Bank, No. 441, Oxford-street, London.

Interest at the rate of 5 per cent. per annum will be allowed for moneys paid in advance of calls.

By order, WILLIAM THOMAS DAVINIERE, Sec.

No. 26, Lincoln's Inn-fields, London, W.C., March 1862.

DEVON NEW COPPER MINING COMPANY (LIMITED).—Notice is hereby given, that the FIRST ORDINARY GENERAL MEETING of this company will be HELD on MONDAY, the 10th day of March next, at 6 o'clock, at the undermentioned address. The chair will be taken at Two o'clock in the afternoon precisely.

Notice is also hereby given, that the said meeting will be held, not only for the ordinary business of the company to be transacted at a general meeting, but also to sanction a LOAN TO THE COMPANY by way of mortgage, and for other business connected with the direction of the company.

By order, GEORGE PAGE, Sec.

F.S.—The meeting will be made special, for arranging the terms of the mortgage, and for business in relation to the issue of shares.

16, Barge-yard Chambers, Bucklersbury, London, E.C., February 25, 1862.

LUSITANIAN MINING COMPANY (LIMITED).—Notice is hereby given that, at a meeting of the directors of the above company, held this day, it was resolved:—That a DIVIDEND OF ONE SHILLING PER SHARE, free of income tax, be PAID on and after the 22nd of March next, and that the transfer books be closed for such dividend on the 15th, and re-opened on the 24th of March.

By order of the Board, WM. G. WILLIAMS, Sec.

No. 5, Queen-street-place, London, E.C., Feb. 25, 1862.

MINERAL EXPLORING COMPANY (LIMITED).—Notice is hereby given, that the GENERAL HALF-YEARLY MEETING of this company will be HELD on MONDAY, the 10th day of March next, at 6 o'clock, at the company's offices, No. 35, Upper Sackville-street, Dublin, for the purpose of receiving the directors' report and the statement of accounts for the past half-year, and for the election of directors.

By order, A. S. COUSINS, Sec.

33, Upper Sackville-street, Dublin, February 26, 1862.

WHEAL ELLEN (SOUTH AUSTRALIA) MINING COMPANY (LIMITED).—Notice is hereby given, that, in conformity with the Articles of Association, the FIRST ANNUAL GENERAL MEETING of this company will be HELD at the offices, 51, Threadneedle-street, on WEDNESDAY, the 5th March, at Eleven o'clock precisely, for the purpose of being adjourned till Wednesday, 19th March, when the report of the directors and accounts of the company will be submitted.

The share transfer books will be closed from Thursday, the 27th inst., until Wednesday, the 19th March next, both days inclusive.

By order of the Directors, JAMES BROWN, Sec.

London, February 24, 1862.

CHARLES DAVEY AND CO., SAFETY FUSE MANUFACTURERS, ST. HELEN'S JUNCTION, LANCASHIRE.

ULVERSTONE AND LANCASTER RAILWAY.

At the HALF-YEARLY GENERAL MEETING of the company, held at the secretary's office, Ulverstone, on Friday, the 21st February, 1862, ALEXANDER BROGDEN, Esq., in the chair.

The advertisement convening the meeting having been read by the secretary, The following resolutions were unanimously adopted:—

That the common seal of the company be affixed to the register-book of shareholders, now produced.

The report having been taken as read, it was resolved that the statement of accounts and directors' report be received and adopted, and that the same be circulated amongst the shareholders, as usual.

That in pursuance of the arrangement entered into for the sale and transfer of this undertaking to the Furness Company, a dividend on the ordinary capital of the company be declared at the rate of 5 per cent. per annum for the past half-year, and that the same be payable on the 1st day of March next.

John Brogden, Esq., and James Garstang, Esq., being the two directors retiring from office, and being eligible for re-election, resolved that they be re-elected directors.

That Stephen Jackson, Esq., the retiring auditor, be re-elected.

That the thanks of the meeting be given to Alexander Brogden, Esq., for his conduct in the chair.

ALEX. BROGDEN, Chairman.

WHEATLEY KIRK AND CO., CONSULTING, GENERAL, AND TELEGRAPHIC ENGINEERS, MACHINISTS AND CONTRACTORS.

ARCHIMEDEAN WORKS, ALBERT STREET, ST. MARY'S, MANCHESTER. ESTIMATES, DRAWINGS, SPECIFICATIONS, &c., FURNISHED for all classes of MACHINERY, for home and exportation, and all orders for same executed with the utmost dispatch.

TO CONTRACTORS, ENGINEERS, PUBLIC COMPANIES, LANDED PROPRIETORS, AND CAPITALISTS.—DEBENTURES, MORTGAGES, SHARES, LOANS TO ENABLE CONTRACTORS TO COMPLETE WORKS, &c., negotiated.—Address, WHEATLEY KIRK AND CO., consulting engineers, valuers, &c., London, and Albert-street, St. Mary's, Manchester.

VALUABLE FREEHOLD ESTATE NEAR CALLINGTON, IN THE COUNTY OF CORNWALL.

TO BE SOLD, BY TENDER (the highest, above £1450, will be accepted), all that SUPERIOR FREEHOLD ESTATE, known as WILTOWN WOOD, situate in the parish of St. Dominick, in the county of Cornwall, about half a mile from the town of Callington, comprising about 57 acres, about 12 acres being of fine oak coppice, and the remainder consisting of thriving oak, Scotch fir, and larch, the whole of about forty years' growth.

The estate adjoins, on the north, the East Cornwall and Langford Mines, the former well known as having produced a considerable quantity of silver. The lodes of this, and also of other mines, are supposed (according to the opinion of an experienced surveyor) to run into Wiltown Wood, being only separated from the estate by a small rivulet. This offers an opportunity for investment rarely to be met with.

For viewing the estate, apply to Mr. J. C. Johns, Callington; and for further particulars and conditions of sale to GEORGE EASTLAKE and Co., solicitors, 15, Frankfort-lane, Plymouth, by whom tenders will be received until and including Monday, the 31st day of March next.

VALUABLE FREEHOLD LAND AND PUBLIC HOUSE, known as the Elephant Inn, at SWERTON, in the COUNTY OF LEICESTER, with the MINERALS under the same; and also VALUABLE MINES AND MINERALS, at LITTLE HALLAM, in the COUNTY OF DERBY.

TO BE SOLD, BY PRIVATE CONTRACT, all that VALUABLE PASTURE LAND, with the PUBLIC HOUSE and outbuildings thereon, containing 12 acres or thereabout; and also the TWO SEAMS OF COAL thereunder, known as the TOP HILL and the EUREKA, and now working by the Moira Colliery Company and the Greasley Colliery Company.

Also, all those VALUABLE FREEHOLD MINES, BEDS, OR SEAMS OF COAL AND IRONSTONE, lying under certain freehold land and hereditaments, situate at Little Hallam, in the parish of Ilkeston, in the county of Derby, belonging to Mr. Anthony Harris and others, and to the Midland Railway Company, containing 75 a. 3 r. 34 p. and 2 a. 2 r. 19 p., or thereabout, with powers reserved or given to work, get, and sell the same.

The above minerals adjoin others of equal value and considerable extent, which may be had on lease upon reasonable terms.

Further particulars and information may be had on application to Mr. WILLIAM STENSON, of Whitwick, mining engineer; or to Mr. JAMES HOLT, solicitor, Derby.

MINERAL PROPERTY TO LET.

TO BE LET on lease for a term of years, at NEWBOLD, near CHESTERFIELD, in the county of DERBY, A FIELD OF MINERALS, containing VALUABLE COAL AND IRONSTONE, the principal of which is the BLACK-SHALE OR SILKSTONE COAL, now so extensively used as a house-fuel in the London market. The coal is of excellent quality and at a moderate depth, having been proved by sinking by the New Tupton Colliery Company.

The IRONSTONE consists of the DOOTOOTH AND BLACKSHALE, both of which are capable of producing a first-class iron; and there are seams of coal in this estate suitable for smelting, and which are used for this purpose at the furnaces immediately adjoining.

A branch railway has been secured to connect this property with the Midland Railway, which is within a short distance, and arrangements made to work the traffic at a fixed rate per ton.

For particulars apply to Messrs. REGGROUX and BROMHEAD, 91, Cannon-street, London, E.C.; or to Mr. R. G. COKE, Mining Engineer, Chesterfield.—Feb. 27, 1862.

TO MINING COMPANIES.

HAM IRON AND MANGANESE MINES.—TO BE LET, for a term of years, ONE HUNDRED AND TWENTY-SEVEN ACRES OF LAND, containing VALUABLE IRON ORE, RED AND BROWN HEMATITE, and MANGANESE. The estate is situate at Ham, which is distant about 1½ mile from Shepton Mallet, and 3½ miles from the city of Wells.

The East Somerset Railway will be open to Wells early in February, establishing through communication without break of gauge between the great Western Railway, eastward at Witham, and the Bristol and Exeter Railway, westward at Highbridge.

The lessee will have to bear the expenses attendant on an application to the Court of Chancery, to sanction a lease of the mines under the Settled Estates Act.

For all further particulars, apply to Messrs. PHIPPS and MACKAY, solicitors, Shepton Mallet, Somerset.—Dated Shepton Mallet, January 16, 1862.

MINERAL PROPERTY TO LET.—TO BE LET ON LEASE, about THREE HUNDRED AND SIXTY ACRES OF COAL GROUND, believed to contain the celebrated Rhonda seams of coal, together with the Aberdare steam coal measures. A large brattice pit has been sunk on the property, to the depth of about 70 yards. The property adjoins the Taff Vale Railway, and is within half a mile of the port town of Pontypridd, Glamorganshire, and 12½ miles from the port of Cardiff.—For terms and further particulars, apply to Messrs. HURRY and CARLISLE, solicitors, New-square, Lincoln's Inn, London, W.C.; or to ALEXANDER BASSETT, Esq., mining engineer, Cardiff, Glamorganshire.

THE DON PEDRO NORTH DEL REY GOLD MINING COMPANY (LIMITED).

The liability of the shareholders is limited to the amount of their shares, the company being registered under the Joint-Stock Companies Act, with limited liability.

Capital, £100,000, in 100,000 shares of £1 each.

Deposit, 10s. per share; 5s. on application, and 5s. on allotment.

The remainder will be called up at intervals of not less than three months, and not exceeding 5s. per share.

DIRECTORS.—HENRY CLAYMEN, Esq. (Director of the Bombay, Baroda, and Central India Railway Company), Clarendon-road, Kensington.—Chairman.

JOHN WORMALD, Esq. (late of Rio Janeiro), Brockworth Manor, Gloucestershire.

W. F. DROUGHT STEPHENS, Esq., Cleveland-gardens, Hyde-park.

ROBERT HENKETH, Esq. (late Her Britannic Majesty's Consul at Rio de Janeiro), Southampton.

WILLIAM F. POSTER, Esq., 16, Montagu-square.

EDMUND EDWARDS, Esq., C.E. (Director of the Pachuca Silver Mining Company), Beaufort-buildings.

AGENTS IN BRASIL.—Messrs. John Moore and Co., Rio Janeiro (Messrs. J. Bramley-Moore and Co.), Liverpool.

AUDITORS (Official).—G. H. Jay, Esq. (Messrs. Quilter, Hall, Jay, and Co.); Joseph Tully, Esq. (late of Rio Janeiro), City Club.

BANKERS.—Messrs. Masterman, Peters, Mildred, Masterman, and Co., 35, Nicholas-lane, Brokers.—John Power, Esq., 1, Royal Exchange-buildings.

SOLICITORS.—Messrs. Kimberley and Pope, 26, Old Broad-street.

SECRETARY.—John E. Dawson, Esq.

TEMPORARY OFFICES.—82 & 83, GRESHAM HOUSE, OLD BROAD STREET.

Detailed prospectuses can be obtained at the offices of the company, or by post, containing extracts from the reports of Capt. WILLIAM THORP (late manager to the St. John del Rey, and now chief engineer to the East del Rey Company), Capt. WILLIAM VERRAN (late chief-mining agent to the St. John del Rey), Capt. JOEL HITCHINS, and Mr. WILLIAM HALFRED.

THE MINING REVIEW, AND JOURNAL OF COMMERCE, TRADE AND MANUFACTURE, SCIENCE AND THE ARTS.

Wednesday, February 5, 1862. Subscription, £1 1s. annually. Price 6d. stamped.

RAILWAYS AND MINES.

Capitalists who seek safe and profitable investments, free from risk, should act only upon the soundest information. The market prices for the day are for the most part governed by the immediate supply and demand, and the operations of speculators, without reference to the bona fide merits of the property. Railways depend upon the traffic, expenditure, and capital accounts, the probabilities of alliance or competition with neighbouring companies, the creation of new shares, the state of the money market as affecting the renewal of debentures, and other considerations founded on data to which those only can have access who give special attention to the subject. Mines afford a wider range for profit than any other public securities. The best are free from debt, have large reserves, and pay dividends bi-monthly varying from £15 to £25 per cent. per annum. Instances frequently occur of young mines rising in value 400 or 500 per cent. But this class of security, more than any other, should be purchased only upon the most reliable information. The undersigned devote special attention to railways and mines, afford every information to capitalists, and effect purchases and sales upon the best possible terms. Thirty years' experience in mining pursuits justifies us in offering our advice to the uninitiated in selecting mines for investment; we will, therefore, forward, upon receipt of Post-office order for 5s., the names of six dividend and six progressive companies that will, in our opinion, well repay capitalists for money employed.

Messrs. TREDNICK AND CO., STOCK AND SHAREBROKERS, AND DEALERS IN BRITISH MINING SHARES, 78, LOMBARD STREET, E.C.

BRITISH AND FOREIGN STOCK, RAILWAY, AND MINING SHARES BOUGHT AND SOLD by Messrs. FULLER AND CO., No. 26 CHANGE ALLEY, CORNHILL, LONDON. The holders of stock are invited to communicate with them, either for the purchase or sale of such stocks.

Messrs. FULLER and Co. call especial attention to the present favourable opportunity of investing in British mines, being perfectly free from risk, and paying 15 to 20 per cent. Also, in a few progressive mines, upon which 250 to 500 per cent. profit may be realised in a few months. Telegraphic messages promptly attended to.

In the Court of the Vice-Warden of the Stannaries. Stannaries of Devon.

In the Cause of BAYLY v. SKEWIS.

IN RE NORTH WHEAL EXMOUTH MINE. Cause, and bearing date the 3d day of January last, BY PUBLIC AUCTION, at NORTH WHEAL EXMOUTH MINE, in the parish of Christow, within the said Stannaries, on Thursday, the 13th day of March next, at Twelve o'clock at noon, either together or in lots, the MINING MACHINERY, MATERIALS, and EFFECTS at and upon the said mine or belonging thereto, or to the adventurers therein in respect thereof, particulars of which appear in handbills.

HENRY SEWELL STOKES, Solicitor, Truro (Agent for Samuel Cater, Plaintiff's Solicitor, Plymouth).

Dated Registrar's Office, Truro, February 25, 1862.

Wednesday, 5th March, 1862, at Eleven o'clock in the forenoon. FOR SALE, BY PUBLIC AUCTION, at WEST WHEAL MARGARET MINE, LELANT, CORNWALL, a highly polished 30 inch cylinder PUMPING ENGINE, with 10 ton boiler. The engine and boiler pronounced to be equal to new, and on the most improved principle. Pitwork, 6 and 7 in., and a quantity of 6, 7, and 9 in. wood rods, shears, capstan and capstan rope, and sundries.

MR. JOHN BURGESS is instructed to SELL, BY PUBLIC AUCTION, on Wednesday, 5th March, 1862, at WEST WHEAL MARGARET MINE, LELANT, CORNWALL, the following excellent ENGINE and MINE MATERIALS:—

ONE 30 in. cylinder PUMPING ENGINE (bright work throughout), in perfect order. BOILER, equal to new, about 10 tons.

Sump shears and sieves, 60 ft. legs, pulleys and brasses, &c.

8 arm capstan.

Capstan rope and chain.

2 shears at flat-rod shafts, 50 ft. legs, pulleys and brasses, oak caps.

Iron balance-bob at sump shaft, fagged pins and gudgeons.

2 superior balance-bobs, on the most improved principle, at flat-rod shaft.

70 fms. of 6 in. 9 ft. pumps.

7 sinking and flat-bottom windbores.

3 5 in. working barrels, bucket prongs, strapping plates, rod bolts, and flange bolts.

2 24 in. smiths' bellows.

3 anvils.

2 smiths' vices.

Sundry new and old timber.

Sundry lots of new and old cast-iron, steel, Stamp grates and other materials.

The engine reflects great credit on the engineers, Hooking and Sons, Redruth, and the other work, surface and underground, to the agent of the mine.

The auctioneer begs the attendance of mine agents to this superior lot of materials. All will be sold in one day, therefore the sale will begin precisely at Twelve o'clock.

Refreshments before and after sale.

Any further information may be obtained of Mr. JAS. HOLLOW, mining offices, Lelant, Hayle; or at the office of the auctioneer, Barncoose, Redruth, Cornwall.

BUDNICK CONSOLS MINE, PERRANZABULOE.

The shareholders having resolved to sell the machinery and materials (in the event of the lord of the soil not taking the same at a valuation),

MR. JOHN LITTLE WILL SELL, BY PUBLIC AUCTION, at the Royal Hotel, Truro, on Wednesday, the 5th day of March, at Three o'clock P.M., in One Lot,

ONE 50 in. cylinder PUMPING ENGINE, 9 ft. stroke, equal beam, with ONE BOILER 12 tons.

ONE 22 in. cylinder DOUBLE ACTING ENGINE, with ONE BOILER, 2 fly-wheels, with 48 heads of stamps, iron axes and lifters complete.

8 horse whims and shaft tackles.

2 balance bobs.

1 L bob for 6 ft. stroke.

1 8 arm capstan and shears.

2 sheaves.

Shears 37 ft. x 9 in. square, 4 ft. shieve.

1 15 in. capstan rope, about 62 cwts.

24 9 ft. 16 in. pumps.

1 5 ft. 14 in. ditto.

6 9 ft. 14 in. ditto.

27 9 ft. 9 in. ditto.

1 5 ft. 9 in. ditto.

1 10 ft. 11 in. ditto.

2 16 in. top doorpieces.

2 11 and top doorpieces.

1 doorpiece.

1 6 ft. windbore.

1 9 ft. 10 in. ditto.

1 10 in. ditto.

1 windbore.

1 16 in. working barrel.

1 14 ft. 15 in. working barrel.

1 13 ft. 15 in. working barrel.

1 10 ft. 7½ in. working barrel.

1 12 ft. 16 in. plunger pole.

1 12 ft. 15 in. plunger pole.

1 12 ft. 10 in. plunger pole.

1 16 in. stuffing box and gland.

1 14 in. stuffing box and gland.

1 matching.

1 15 in. clack seat.

1 15 in. bucket door and windbore.

24 strapping plates.

4 strapping plates, 8 ft. x 3½ x ¼ in.

2 strapping plates, 8 ft. x 4 x ¼ in.

2 strapping plates, 9 ft. x 4 x ¼ in.

2 strapping plates, 7 ft. x 4½ x ¼ in.

3 strapping plates, 9 ft. x 4½ x ¼ in.

2 strapping plates, 16 ft. x 3½ x ¼ in.

2 strapping plates, 15 ft. x 3½ x ¼ in.

60 fms. 12 in. rods.

15 fms. 6½ in. ditto.

1 main rod, 50 ft. 8 in. x 1½ in. square.

1 main rod, 49 ft. 6 in. x 1½ in. square.

4 iron flat-rods, 24 ft., each 1½ in.

1 iron flat-rod, 21 ft., each 1½ in.

1 iron flat-rod, 20 ft., each 1½ in.

1 iron flat-rod, 15 ft., each 1½ in.

6 ft. pulley.

1 4 ft. pulley.

33 2 ft. pulleys.

6 1 ft. 6 in. pulleys.

1 1 ft. 2 in. pulleys.

Sword for little engine sweep rod.

Sweep rod, 26 ft., and plates.

4 machine kibbles.

14 horse whim kibbles.

400 fms. 2-16 chain.

2 fms. chain.

430 fms. rope and chain.

House water lift.

2 15 in. fly-wheels, 6 in. ring.

4 stamps axes, about 12 tons.

7 new stamp heads.

9 new grate plates.

109 ft. lifters, 4 x 1½ in.

55 ft. lifters, 2½ in. square.

12 ft. iron bar, 3½ x 3.

Old boiler, 29 ft. x 3½ ft.

Whim cage.

Old cog wheel, driver and stool.

Water-wheel, 11 ft. 6 in., 4 ft. breast.

Crack and driving gear.

2 15 in. rolls.

2 stools and bearings.

2 levers.

3 old cog wheels and shafting.

Carpenter's bench, grindstone, hand-screw; new iron, 31 cwts. 0 qrs. 21 lbs.; octagon cast-steel, 2 cwts. 0 qrs. 9 lbs.; blister steel, 1 qr. 18 lbs.; gadsteel, 1 cwt. 0 qr. 25 lbs.; shovels, 1 cwt. 1 qr. 21 lbs.; red lead, 3 qrs. 7 lbs.; old scrap sheet lead, 3 cwts. 3 qrs. 12 lbs.; old brass, 1 qr. 22 lbs.; 5 in. nails, 2 cwts. 3 qrs. 6 lbs.; 4 in. nails, 2 qrs.; 3 in. nails, 3 qrs. 14 lbs.; 2 in. nails, 2 qrs.; counter-sunk nails, 1 qr. 14 lbs.; 67 lbs. of leather, 45 lbs. white rope, 100 lbs. hemp, 50 lbs. tallow, 2 candle chests, 686 lbs. of candles, 181 lbs. powder, 34 coils fuse, 12½ dozen hilt, 2 dozen cans, 1 dozen sheets of paper, 4 locks, 17 brushes, large beam, scales and weights. Also the account-house furniture, consisting of 1 dining table, 3 leaf tables, 1 kitchen table, 2 desks, 1 stool, 5 forms, dresser and shelves, nest of drawers, bed, cooking utensils, &c.

The whole of the above are of first-rate quality (nearly new), and can be recommended with every confidence to the mining public.

The agents on the mine will afford every facility to parties wishing to inspect the materials, and further particulars may be had by applying to Messrs. TREFFRY and POKINGORNE, Far Office, the pursers, or to Mr. JOHN LITTLE, auctioneer, Redruth.

Dated Redruth, February 25, 1862.

BY ORDER OF THE NEW RIVER COMPANY.

VALUABLE STREAM-ENGINE, BOILER, PUMPS, and other PLANT, to complete the clearance of the site of the Hampstead-road Reservoir, London, which has been let for building.

MR. JOHN WALLEN is instructed by the directors to SELL, BY PUBLIC AUCTION, on the premises, on Tuesday, March 11, at Twelve, in lots, a capital 50 horse-power CONDENSING ENGINE, by Boulton and Watt, of compact, portable, and economical construction, in first-rate working order, with 18 feet fly-wheel; a MARINE BOILER; a QUANTITY OF COPPER and IRON PIPING, valves and gauges, shafting and pinions, three 7-ft. spur-wheels, pump cranks and rods; a set of three 10-inch force-pumps, with three-throat crank; a 12-inch single force-pump and gear, and other PLANT and TOOLS.

To be viewed two days previously and morning of sale.

Catalogues at the New River Office, Clerkenwell; on the premises; and of Mr. JOHN WALLEN, 68, Old Broad-street, London, E.C.

LAMERTON, DEVON. IMPORTANT SALE OF MINE MATERIALS, &c.

MESSRS. WARD AND CHOWEN have been directed to OFFER FOR SALE, BY AUCTION, on Wednesday and Thursday, the 5th and 6th of March next, commencing at One o'clock P.M. on each day, the whole of the VALUABLE PLANT of MACHINERY and MATERIALS on COLLAcombe DOWN MINE, in the parish of LAMERTON, DEVON, comprising:—

A 30-in. cylinder PUMPING-ENGINE, with ONE BOILER.

A 22-in. cylinder WHIM-ENGINE, with ONE BOILER, HAULING MACHINERY and CRUSHER attached.

A WATER-WHEEL, 60 ft. diameter, 3½ ft. breast, quite new, with iron axle and rings; also, two balance and travelling bobs, complete, 6 or 8 ft. stroke.

480 fms. of 2 and 3½ in. round iron rods; 40 fms. square rods; one 13 in. lift of three 10 in. lifts of ditto; also several 11 and 9 in. lifts, and other pitwork; 11½ 12 in. capstan-rope; 85 fms. 10 in. ditto; 49 in. cylinder and case; two capstan shears, quite new, and a large quantity of iron rods; two crab-w

BEDFORD IRONWORKS, TAVISTOCK.

NICHOLLS, WILLIAMS, AND CO. have generally a GOOD STOCK OF SECOND-HAND MINING MATERIALS FOR SALE. They also MANUFACTURE STEAM ENGINES of every description on the newest principle. Castings and wrought-iron work made at the shortest notice. Machinery sent to all parts of the world. Steam boilers and chains warranted of the best description.

PATENT COATED LEAD PIPES AND CISTERNS.
IMPORTANT TO BOARDS OF HEALTH, WATER-WORKS COMPANIES, BUILDERS, PLUMBERS, ETC.—THE LEAD MERCHANT, PATENT PIPE MANUFACTURER, &c., 58 and 60, SHUDE HILL, MANCHESTER, has the pleasure of informing his friends and the public that he has ARRANGED with Mr. McDougall for the USE of his PATENT COATING for LEAD and LEAD PIPES in this district, and that he has succeeded in applying it to the interior of lead pipes during the process of manufacture. This coating has been tested by the highest chemical authorities, and has been found to be the BEST for the PROTECTION of the WATER. THE ACTING SURGEON-GENERAL, H.M. COLLEGE, has also examined the PATENT COATING of the PUREST WATER. Samples may be seen, and all particulars had, by applying as above.—Shude Hill Lead Works, Feb. 14, 1862.

PATENT BITUMINIZED GAS, WATER, AND DRAINAGE
PIPES.—THESE PIPES POSSESS ALL THE PROPERTIES NECESSARY FOR THE CONVEYANCE OF GAS AND WATER, and also for DRAINAGE PURPOSES—viz., GREAT RESISTANCE TO DECOMPOSITION, PERFECT NON-IGNITABILITY, and being non-conductors are not affected by frost, like metal pipes. They are proved to resist a pressure of 220 lbs. on the square inch (equal to 500 ft. head of water), are only one-fourth the weight, and considerably cheaper than iron pipes. They are made in 7 ft. lengths, and the joinings are simple and inexpensive. These pipes have been in use in France, Spain, and Italy nearly three years, where the demand for them is very great. The opinions of the press on a public test, the Houses of Parliament, before a committee of nobles and gentlemen, and the numerous testimonials, with further particulars, at the office of the company, on application to Mr. ALEX. YOUNG, 14, Cannon-street, London, E.C., where sample pipes may be obtained for trial.

HALL AND WELLS, PATENTEES AND MANUFACTURERS OF SUBMARINE TELEGRAPH CABLES, &c.—TELEGRAPH CONDUCTORS INSULATED WITH INDIA RUBBER at 25 per mile and upwards, PARTICULARLY ADAPTED FOR MINING PURPOSES. Further particulars as to price of cores, cables, &c., can be had on application at 60, Aldermanbury, City, E.C.; and Steam Mills, Mansfield-street, Borough-road, Southwark, S.E. Copper wire covered with silk, cotton, or any other material, to order.

AYTOUN'S PATENT SAFETY CAGE AND HOIST.
CHANGE OF LICENSE FEE.

The present LOW RATE OF LICENSE FEE, £1 per cage, will be CONTINUED until the CLOSE of the INTERNATIONAL EXHIBITION, where facilities will be afforded to parties interested to assure themselves of the value of the invention. A FULL SIZED SAFETY CAGE will be there EXHIBITED in ACTION, and may be subjected to whatever tests parties may desire. Also, a VARIETY of MODELS SHOWING the ADAPTATION of the SAFETY PRINCIPLE to CAGES of VARIOUS CONSTRUCTIONS, and to GUIDE RODS of IRON as well as of WOOD.

Parties having thus had an opportunity of ascertaining themselves of the trustworthiness of the safety cage, and of providing themselves with all the licenses they may require, at a low figure, the patentee proposes, immediately on the close of the Exhibition, to raise the license fee to £6, £7, and £8 per cage, according to the weight it is calculated to carry. This will enable him to set on foot an active canvass for the introduction of the safety cage into every mining district of the kingdom, a measure plainly impossible with the present low fee of £1.

The patentee has at the satisfaction of saying that he has now made arrangements with the well-known firm, Messrs. James Tod and Son, engineers, Edinburgh, which will enable him to furnish safety cages, calculated to carry from 12 to 15 cwt. of coal or ironstone, at £10 each, and other sizes in proportion. As the carriage of a cage by the Scotch railway companies is at the rate of 10s. per ton, the cost of the cage will be almost any locality for a sum not exceeding 10 guineas, exclusive of the license fee, which at present is only 1*l*. Coal and ironmasters, therefore, would do well, at this time, to provide themselves with one, which, on being tried in their pits and found to answer, would serve as a model for making others. By sending the order through the patentee's

To those who prefer getting them made on their own premises, working drawings of models will be sent, which will enable any ordinary workman to construct the safety cage easily.

In view of any further attempt of the Legislature to make the use of safety cages imperative, it would seem advisable to secure licenses at the present low rate for as many as are required.

Apply to the patentee, ROBERT ATTOUN, 3, Fettes-row, Edinburgh.

BASTIER'S PATENT CHAIN PUMP
 APPARATUS FOR RAISING WATER ECONOMICALLY, ESPECIALLY
 APPLICABLE TO ALL KINDS OF MINES, DRAINAGE, WELLS, MARINE
 FIRE, &c.

J. U. BASTIER bade call the attention of proprietors of mines, engineers, architects, farmers, and the public in general, to his new pump, the cheapest and most efficient ever introduced to public notice. The principle of this new pump is simple and effective, and its action is so arranged that accidental breakage is impossible. It occupies less space than any other kind of pump in use, does not interfere with the working of the shaft, and its lightness and durability are its special features. It is not necessary to pump hydraulic machine water can be raised economically from wells of any depth; it can be worked either by steam-engine or any other motive power, by quick or slow motion. The following statement presents some of the results obtained by this hydraulic machine.

as daily demonstrated by use:—

- 1.—It utilises from 90 to 92 per cent. of the motive power.
- 2.—Its price and expense of installation is 75 per cent. less than the usual pumps employed for mining purposes.
- 3.—It occupies a very small space.
- 4.—It raises water from any depth with the same facility and economy.
- 5.—It raises with the water, and without the slightest injury to the apparatus sand, mud, wood, stone, and every object of a smaller diameter than its tube.

J. U. BASTIER, sole manufacturer, will CONTRACT to ERECT his PATENT PUMPS at his OWN EXPENSE, and will GUARANTEE it FOR ONE YEAR, or will GRANT LICENSES to manufacturers, mining proprietors and others, for the USE of his PATENT PUMPS.

OFFICES, 10, MANCHESTER BUILDINGS, WESTMINSTER, LONDON.
London, Oct. 10, 1859. Hours from Ten till Four. **J. U. BASTIER, C.E.**


SARL AND SONS, 17 and 18, CORNHILL, respectfully
SOLICIT a VISIT to their magnificent ESTABLISHMENT. The ground floor
is more particularly devoted to the display of FINE GOLD JEWELLERY, GOLD and
SILVER WATCHES, and FINE GOLD CHAINS.

The SILVER PLATE DEPARTMENT is in the gallery of the building, and consists of every article requisite for the table and sideboard.

In the magnificent show-rooms is displayed a large and beautiful stock of ARGENTINE PLATE, the manufacture of which has stood the test of 20 years' experience.

SAIL and SONS have also fitted up a separate show-room for the display of DRAWING and DINING ROOM CLOCKS of the most exquisite designs. Books containing drawings and prices may be had upon application.

SARLE AND SONS, 17 and 18, CORNHILL, LONDON

 **AUSTRALIA AND NEW ZEALAND**
WHITE STAR EX-ROYAL MAIL CLIPPERS,
SAILING FROM

LIVERPOOL to MELBOURNE on the 1st and 20th of every month.
 * * Passengers holding Victoria passage warrants will be forwarded to Melbourne by these vessels.

Ship.	Destination.	Register.	Burthen.	To sail.
MISTRESS OF THE SEAS ..	Melbourne.....	1677	.... 5000	.... March 20.

GREAT AUSTRALIA..... Melbourne..... 1500 4500 April 20.
 ELIZABETH A. BRIGHT..... Melbourne..... 1440 4800 May 20.
 The splendid new clipper *Whitress* of the S. W. will be dispatched for Melbourne
 on the 20th March, with passengers and cargo. This fine vessel has been constructed
 expressly for the Australian passenger trade, by the well-known builders of the *White
 Star*, *Morning Light*, and other celebrated clippers. She has only just made her maiden
 voyage from St. John's, which was, however, sufficient to test her sailing qualities, and
 prove her to be the most rapid and comfortable steamer ever constructed. Excellent
 accommodations, and the apartments for second cabin and other classes of passengers cannot be
 excelled.

For freight or passage apply to the owners, H. T. WILSON and CHAMBERS, 21, Water street, Liverpool; or to GRINDLAY and Co., 124, Bishopsgate-street, and 55, Parliament-street; or SEYMOUR, PEACOCK, and Co., 116, Fenchurch-street, London.

Wilcox's Australian and New Zealand hand-books sent for two stamps.

ACCIDENTS ARE UNAVOIDABLE
 Every one should therefore provide against them.
THE RAILWAY PASSENGERS ASSURANCE COMPANY
 Grant Policies for Sums from £100 to £1000, Assuring against
ACCIDENTS OF ALL KINDS.
 An annual payment of £3 secures £1000 in case of DEATH by ACCIDENT, or a
 relief of £1000 in case of disablement, or £5000 in case of death by accident.

Apply for forms of proposal, or any information, to the Provincial Agents, the Book-
Clerks at the Railway Stations.
Or to the Head Office, 64, CORNHILL, LONDON, E.C.
£102,817 have been paid by this company as Compensation for 56 fatal Cases, and
5041 Cases of personal injury.

The **SOLE COMPANY** privileged to issue **RAILWAY JOURNEY INSURANCE**
TICKETS, costing 1d., 2d., or 3d., at all the Principal Stations,
 Empowered by Special Act of Parliament, 1849.
64, Cornhill, E.C. **WILLIAM J. VIAN, Sec.**

COUGHS, ASTHMA, and INCIPENT CONSUMPTION are EFFECTUALLY CURED by KEATING'S COUGH LOZENGES. Statistics show that 50,000 persons annually fall victims to pulmonary disorders, including consumption, diseases of the chest, and the respiratory organs. Prevention is at all times better than cure; be, therefore, prepared during the wet and wintry season with a supply of KEATING'S COUGH LOZENGES.

poly of Keating's cough lozenges, which possess the virtue of averting as well as of curing a cough or cold. They are good alike for the young or for the aged. Prepared and sold in boxes, ls. 1½d.; and tins, 2s. 9d., 4s. 6d., and 10s. 6d. each, by THOMAS KEATING chemist, &c., 79, St. Paul's-churchyard, London. Retail by all druggists, &c.

THE NEW FRENCH REMEDY, THERAPION, for nervousness, debility, and exhaustion. In four weeks restores manhood to the most shattered constitution, with marvellous certainty. Price 11s., or four times the quantity for 33s. Agents for England, **THOMAS & CO., 7, Upper St. Martin's-lane, London**, by whom will be sent anywhere, carefully packed, on receipt of Post-office order.

DR. SMITH has just published a free edition of his valuable work, the PRIVATE MEDICAL FRIEND (116 pages), on the Self Cure of Nerve Debility, Loss of Memory, Dimness of Sight, Lassitude, &c., resulting from the errors of youth. Sent post free to any address, on receipt of a directed envelope, enclosing two postage stamps.

Age stamps.—Address, Dr. SMITH, 8, Burton-crescent, Tavistock-square, London, W.C.

PROGRESSIVE MINES.

PROGRESSIVE MINES.

Shares.	Mines.	Paid.	Last Pr.	Bus. done.	Last Call.
4825	Abbay Consols (id.) Cardigan.	3 0 0.	..	..	Nov. 1861.
1000	Billy-Crith (id.) [L. £25]	2 18 6.	..	..	Oct. 1861
10000	Angarrack (cop.), Philhack.	1 16.	1 16.	1 16.	June, 1859
1000	Ashburnton United (cop., tin)	14 0 0.	14 0.	14 0.	Oct. 1861
1624	Baileswidden (tin), St. Just	13 10.	13.	13.	..
10000	Bampfylde (cop.), Devon.	0 15 0.	0.	0.	Aug. 1860
4000	Bedford Consols (copper) ..	2 16.	16.	34.	Jan. 1862
2000	Berehaven (copper), Ireland.	1 0 0.	1 0.	1 0.	..
7500	Bickley Vale Phoenix [L.]	0 0.	0.	18.	.. Fully paid.
30	Bittins (copper), Devon.	20 0 0.	20.	0.	Feb. 1861
10000	Borlase Con. (tin), St. Just [L.]	1 0 0.	..	..	.. Fully paid.
1248	Boscawell (tin), Penzance.	6 5 0.	5 8.	..	Dec. 1861
2280	Boscunde (tin cop.), St. Austell	6 15 0.	4 0.	..	Sept. 1860
160	Bosorne & Bollowall, St. Just	6 5 0.	5 10.	..	Dec. 1860
5000	Butte Hill (tin), Plympton.	1 0 0.	..	10s. 11s.	..
12000	Brea Con. (tin), St. Ives [L. 30s.]	1 3 0.	24s.	3 4	Oct. 1861
5000	Bronfild (id.) [L.] Cardigan [L.]	0 0.	0.	24.	Feb. 1862
11000	Brown-Blaithford (copper), L.	20 0 0.	20.	0.	No call.
6120	Brynmador (id.), Cardigan.	2 0 0.	2 0.	24.	May, 1861
200	Brynmor Hill (lead), Flint.	21 10 0.	5 0.	..	Jan. 1862
500	Bryn Gwlog (lead), Flint.	5 0 0.	30.	..	Oct. 1861
2000	Bryntal, Llanidloes, Montgo.	5 7 0.	4 0.	..	Aug. 1861
6380	Buller and Bassett Unit. (cop.)	3 9 6.	1 13.	..	Jan. 1862
4096	Calstock Consols (copper) ..	5 10 0.	0.	..	Jan. 1862
4000	Calvaddack (copper), L.	10 0 0.	7 14.	..	Dec. 1860
1000	Camboon Consols (copper), L.	17 0 0.	8 0.	..	Feb. 1862
4600	Camborne Yeap & Wh. Francis	8 4 4.	2 10.	2 2 1/2	Jan. 1862
914	Caradon Cons. (cop.), St. Cleer	23 7 0.	13 1/2.	..	Dec. 1861
1000	Caradon Consols [L. £10]	8 0 0.	9 0.	..	Oct. 1861
916	Cargill (silver-lead), Newlyn	15 7 15.	7 15.	..	Sept. 1860
2580	Cardarthen United	5 0 0.	4 0.	..	.. Fully paid.
6000	Carn Camborne	0 7 0.	13s. 15s.	..	May, 1861
4500	Carradock (id. cop.), L.	4 0 0.	..	..	Jan. 1861
3000	Carn Vivilian (tin cop., lead)	2 16.	16.	24.	Nov. 1861
7000	Carrack Dews	2 16 0.	1 0.	..	April, 1861
1056	Carrvannall (cop.), Gwennap	21 11 7.	3 0.	..	Dec. 1860
20000	Carysfort (cop., id.) [L. £2 1/2]	0 10 0.	10s.	9s.	Mar. 1859
10000	Castleward, Ireland [L. £1]	0 15 0.	15s. 6d.	..	Mar. 1861
2500	Cefn Cilien (lead), Flintshire.	1 7 0.	1 0.	..	Feb. 1861
4000	Clara Unit., Penterwyd [L.]	1 0 0.	24.	1 1/2	Jan. 1862
900	Cliff & W. (tin cop., lead)	20 0 0.	20.	..	May, 1861
6000	Clinton and Edgemoor United	1 0 0.	1 0.	..	Oct. 1860
3135	Coed Mawr Pool (lead) [L.]	4 7 0.	4 0.	..	June, 1861
2000	Collacomb (cop.), Lamerston	5 5 0.	12.	..	..
50000	Connorree (cop., sulph.) [L.]	1 0 0.	1 1/2.	29s.	.. Fully paid.
5000	Cornubia (tin), Roche	1 5 0.	23s.	..	Dec. 1861
10000	Craigton (id.) [L.] [L.] Kirkend.	0 10 0.	4.	..	Jan. 1862
576	Craze (copper), Camborne ..	12 0 0.	5.	8 1/2 9	..
12000	Crealake (cop.), Westvickshire.	—	0 0.	..	No call.
8000	Crookhaven (cop.) [L. £2 1/2]	1 0 0.	6s. 6d.	..	Mar. 1861
2000	Crowlwm (lead), Llanidloes.	1 10 0.	0.	..	No call.
6000	Crownade (tin), Tavistock.	0 11 0.	3 0.	..	Nov. 1858
6000	Cudra (cop., tin), St. Austell	2 9 0.	24.	..	Nov. 1861
1500	Cwmbrane, Carmar. [L. £3]	2 0 0.	2 0.	..	Jan. 1862
8000	Dale, North Staffordshire [L.]	3 5 0.	3.	..	.. Fully paid.
2000	Deep Lead, Minera [L. £5]	3 0 0.	..	..	Feb. 1861
4817	Devon and Courtney (cop.)	1 11 0.	11s.	..	Oct. 1861
12000	Dev. New Copper Co. [L. £2]	—	—	..	..
1200	Devon Union (copper) [L. £1]	0 15 0.	0.	..	Oct. 1861
4568	Devon Wheel Buller (copper)	4 0 0.	34.	..	Feb. 1861
1000	Durio (tin), Lelant	6 12 0.	34.	..	Mar. 1861
2908	Dolcath United [L. £3]	1 0 0.	..	..	June, 1860

8000 E. Polberro, St. Agnes [L.]..	0 10 0..	14..	..May, 186
4098 E. Providence (tin). Univ. Cal.	2 5 10..	314..	..Jan. 186

6000	E. Realeath (tin, cop.), Wendron	0	1	0	1	0	0	0	Aug.	1886
6000	E. Rosewarrie (cop., tin), Gwin.	2	13	0	0	1	1	1	Jan.	1886
5610	East Seton, Camborne	0	6	0	0	0	0	0	Feb.	1886
356	East Tolgus (copper), Redruth	63	0	0	0	0	0	0	Oct.	1886
1000	E. Trefusis (cop.), Gwennap	7	14	7	1	0	0	0	Nov.	1886
1024	E. Treasker (cop.), Redruth.	4	5	0	0	0	0	0	Sept.	1886
1000	E. Wheel Agar (cop.), St. Cleer	8	7	0	0	0	0	0	Nov.	1886
6000	E. Wh. Ellen (all.-id.), St. Ives	0	0	0	0	0	0	0	July	1886
4000	E. Wh. Buzell (all.-id.), St. Ives	7	10	0	0	0	0	0	Feb.	1886
5700	Ermsmouth (all.-id.), Christow	5	19	0	0	1	0	0	Nov.	1886
6000	Fowey and Par Und., St. Blaizey	0	10	0	0	1	0	0	Nov.	1886
5000	Furdon (cop.), Okeham, [L. 30.]	1	7	6	0	0	0	0	Oct.	1886
6000	Furze Hill Wood Cons., Bockle.	0	7	0	0	2	0	0	Dec.	1886
114	Garden (tin), Morvah	35	0	0	0	24	0	0	Feb.	1886
1000	Gareg (lead), Flint	4	13	0	0	0	0	0	Jan.	1886
4000	Gawton (copper), Tavistock.	1	14	0	0	0	0	0	Feb.	1886
1024	Geoffowiller (id.), Holywell.	0	3	6	0	0	0	0	June	1886
6000	Gen. Min. Co. for Irei. (cop.)	4	0	0	0	0	0	0	July	1886
6144	Gogginan (allv.-id.) [1900 £124, 1902 £124]	2	6	0	0	1	0	0	Feb.	1886
6144	Gooninan (cop.), St. Cleer.	2	6	0	0	1	0	0	Feb.	1886
2000	Goonston, St. Neot.	0	2	6	0	0	0	0	Feb.	1886
5000	Great Brigan	0	7	0	0	24	0	0	June	1886
4096	Great Caradon (cop.), St. Ives	1	14	0	0	0	0	0	Feb.	1886
6000	Gr. Crinnie (cop.), St. Austell	2	19	0	0	1	0	0	Feb.	1886
6000	Great North Downs	1	0	0	0	14	0	0	Dec.	1886
10104	Great Onslow Cons., Camelfis.	3	10	0	0	0	0	0	Dec.	1886
6000	Gr. Retallack (all.-id., blende)	1	11	0	0	13	0	0	Feb.	1886
47000	Gr. Treguneon [40,000 £4, 7000 £12]	1	21	0	0	0	0	0	Aug.	1886
10000	Great Treveddode (copper)	0	14	0	0	11	0	0	Jan.	1886
6000	Gr. Tywarthale (cp.), [L. £5]	3	0	0	0	0	0	0	Jan.	1886
5120	Gr. W. L. (all.-id.), St. Ives	1	0	0	0	2	0	0	July	1886
6700	Great Wheel Badden (tin)	5	17	0	0	0	0	0	Feb.	1886
8000	Gr. Wh. Bussy (cop., tin), Ken.	13	0	0	0	6	0	0	Mar.	1886
12500	Great Wh. Martha (cop.) [L.]	1	0	0	0	1	0	0	Fully paid	1886
10240	Gunnis Lake (Clitters add.)	0	2	0	0	3	0	0	Mar.	1886
4910	Gurlyn (cop., tin), St. Erth.	0	18	11	0	0	0	0	Feb.	1886
8634	Gwydyr Park Cons., Llanwarth	0	18	6	0	0	0	0	Dec.	1886
10000	Hafof (id.), Cardigan [L. £ 5]	1	0	0	0	0	0	0	Jan.	1886
6400	Harwood (id.), Durham [L. £1]	0	3	0	0	0	0	0	July	1886

10000	Holmbush [5000 £5 2s. pd., 5000 8s. pd.]..	Sept. 18
40	Jan. 18

	Imperial Silver-Led, Denbighshire	68	0	6	..	..	Jan.
6000	Creswick Lead, Puncallan ..	6	0	6	..	..	Jan.
6001	Lady Bertha (lead), Flint ..	14	6	14	..	..	Jan.
601	Lady Eliza (id.), Carm., [L. 23]	2	8	0	..	..	June,
1019	Leeds & St. Anghyn (tin, cop.)	15	12	3	..	..	Mar.
963	Leilant Cons. (tin), Uny Leilant	23	10	0	..	2%	Mar.
1000	Llanfair (silver-lead) [L.]	6	0	6	..	..	Fully pa
500	Llywernog (id.), Card. [L. 23]	1	4	0	..	1%	Jan.
600	Long Lake (lead), Flint ..	12	0	6	..	14	Feb.
2000	Lower Park Denbighshire [L.]	4	0	18	..	..	Jan.
2080	Mertlyn (lead), Flint ..	12	0	6	..	..	May,
23200	Merryfield (lead), Flint ..	0	12	0	..	9s.	May,
3475	Michell (lead), Flint ..	0	2	6	..	9s.	Nov.
16000	Mold (lead), Flint, [L. 21]	0	17	0	..	..	Jan.

1024 Nangiles (tin, copper), Kea..	5 0 0..	5¼..	..Dec. 18
5000 Nanteos and Penrhio [L. £4]	3 12 0..	—Jan. 18

2400	Nant-y-nno (id.), Merioneth	3 0 0.	2½%.	Mar. 18
2520	Nanty Minos (id.), Montgomery	20 0 0.	—	Fully paid
53	6400 Nether Heath (lead), Duffton.	0 15 6.	¾%.	April, 18
53	6400 N. Crow Hill (id.), St. Stephen	2 2 6.	1½%.	Jan. 18
53	4540 New E. Wh. Russell, Tavistock	0 4 0.	¾%.	Aug. 18
53	8000 New Godolphin	0 10 0.	—	Jan. 18
53	2000 New Treleigh Cons., Redruth	1 14 0.	—	Feb. 18
53	6000 New Wheal Clifford (copper).	0 6 0.	¾%.	Mar. 18
53	1024 New Wheal Hender, Crowan.	2 10 0.	3 ..	June, 18
53	400 New Wh. Seton (cop.), Camb.	15 0 0.	67½%.	Dec. 18
53	2300 New Wh. Vor & E. Wh. Metal	9 0 0.	—	July, 18
53	2500 N. Wh. Vaddon(tin), Marazion	1 2 6.	1½%.	Nov. 18
53	8000 Nidderdale(id.), Yorks.[L. & I.]	0 15 0.	—	Jan. 18
53	N. Budnick (tin id.), Farness.	1 10 0.	40 ..	No call.
53	400 N. Budnick and West Mount	0 8 0.	—	—
53	1024 North Buller (cop.), Redruth.	21 17 6.	2½%.	Feb. 18
53	6000 Nor. Clifford (cop.), Gwennap	0 5 0.	¾%.	Nov. 18
53	4000 North Cornwall (Endellion)	—	3 ..	No call.
53	20000 North Devon (all.-id.), [L. & I.]	2 8 0.	11s. —	Oct. 18
53	6000 N. Dolcoath (cop.), Camborne	2 7 6.	¾%.	Feb. 18
53	1000 North Foretunc	1 14 0.	2 ..	Oct. 18
53	2500 North Frances, (cop.) [S. E.]	18 6 0.	2½%.	Feb. 18
53	6000 North Hafford (tin, cop.) [L.]	0 12 6.	—	Feb. 18
53	8000 N. Hallenbeage (tin, cop.) [L.]	0 15 0.	¾%.	Dec. 18
53	2000 North Jane (tin, silver-lead).	4 0 0.	2½%.	Dec. 18
53	6000 North Kit Hill (tin, copper).	0 2 6.	¾%.	Sept. 18
53	6000 North Laxey (lead) Isle of Man	—	1½%.	Fully paid
53	2000 N. Levant (tin, cop.), St. Just	6 16 6.	6 ..	Aug. 18
53	10000 North Minera (lead) [L.]	1 0 0.	19s. 17s. 19s.	April, 18
53	2000 North Forthly (as.-lead).	—	¾%.	Sept. 18
53	4000 North Rosevear (tin, copper)	0 4 6s. 4d.	—	Dec. 18
53	700 N. Rosegar (cop.), Camborne	18 0 0.	24 ½%.	24 ..

* * Those mines with [S. E.] appended have been submitted to the Strathclyde Lims.

* * Our object being to make the Share List correct, we earnestly call attention which may, from time to time, come under their notice. To information. Reports from mines—in fact, mining intelligence of

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upon all who have the power, to aid us, by forwarding any statements, or information, in relation to the affairs of the company, to the shareholders, as well as those officially connected with the mine, in every description, forwarded to our office, will meet ready attention.

Yours (the proprietors), at their office, No. 26, FIRST STREET, N.C.
 To be addressed.—March 1, 1862.

* * Those mines with [S. E.] appended have been admitted on the Stock Exchange. Those mines with [L.] appended have been limited Liability.

* * Our object being to make the Share List correct, we earnestly call upon all who have the power, to aid us, by forwarding any alteration which may, from time to time, come under their notice. To shareholders, as well as those officially connected with the mines, information. Reports from mines—in fact, mining intelligence of every description, forwarded to our office, will meet ready attention.

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Communications are requested to be addressed,—March 1, 1892.